VOL. 160 — NO. 12

MARCH 25, 1961

Telephony

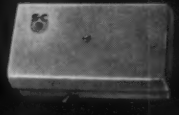
THE JOURNAL OF THE TELEPHONE INDUSTRY

elephone in every dor-
nitory room saves time of
tudents at the East Texas
tate College, served by
Gulf States Telephone Co.
Here Mary Furr gives Janet
tice an assist in necessary
roject while Janet makes
mportant telephone call.
tory on page 46.

Circulation This Issue
14,258 of Which
13,534 Is Paid

MANAGEMENT · PLANT · TRAFFIC · COMMERCIAL · LEGAL · ACCOUNTING

1600-W: It's SMART . . . it's SMALL . . . it LIGHTS! The PETITE—newest, most glamorous number. And from your standpoint, most profitable. Perfect extension for any room; main station, too. Comes with new, compact wall-mounted ringer for superimposed, straight-line or harmonic ringing.



nothing newer—nothing finer than the complete line of Stromberg-Carlson® telephones

1543-W: It's handsome, compact, styled with snap and sparkle. This telephone is engineered for high fidelity of voice transmission, for ruggedness, for true full-range performance. Lightweight handset, of course.

1573-W: (Above) Use it two ways and reap the profits! It provides two-line service plus intercom, with Hold on each line. Or, with a simple adapter, it's a three-line telephone with Hold on each line, without intercom.

1553-W: (Right) The ideal telephone for many, many applications: in kitchen, den, halls, workrooms—just about anywhere in the home. Great for your business subscribers, too—especially where space is a problem. Its slim, trim design gives it tremendous versatility.

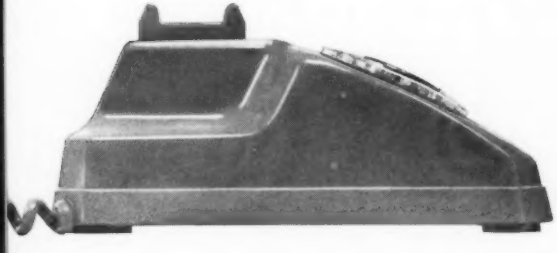
1575-W: (Below) This 6-line telephone, used with the Stromberg-Carlson 6K-1 PBX, is the smallest phone of its kind. Flexibility and versatility are unmatched, with an almost infinite variety of services.

Choose from the most complete line of quality telephones in the independent field! There is nothing newer . . . nothing finer . . . nothing more profitable to you!

Stromberg-Carlson telephones mean satisfied subscribers because of superb transmission and reception quality; graceful styling; full range of smart modern colors.

Contact the Stromberg-Carlson representative in your area. He's the man with the facts, the figures and the selling aids you want.

In Atlanta call TRinity 5-7467; Chicago: STate 2-4235; Kansas City: HArrison 1-6618; Rochester: HUbbard 2-2200; San Francisco: OXford 7-3630.



GENERAL DYNAMICS | ELECTRONICS
TELECOMMUNICATION DIVISION

FLASHES AND PLUGS

NO NEED TO BE TOLD TO—"GO FLY KITE." At Costa Mesa, Cal., 60 miles from Burbank, an unemployed executive has gotten himself a job in a manner to explode all job-hunting theories.

The AP reported on Mar. 8 that a big brown paper kite was soaring over the premises of Jack Wigmore, Costa Mesa resident, and not only his neighbors, but hundreds of the curious came to watch. Wigmore's two sons, home from school in the afternoons, were observed flying the 10-foot kite.

Cause of all the interest was a message printed on the kite in bold letters: "Situation Wanted—Call LI 8-1304."

Even as Wigmore's neighbors kiddingly offered him a job cutting their lawns, the telephone calls began to pour in. Many recession-conscious sympathizers also expressed interest in the problems of a man who had not worked in 2½ months.

It had all started as a kind of joke, Wigmore said, but he got national publicity from this novel advertising device, and it is reported, he went to work Mar. 13 as head of production control for a Burbank engineering company.

•

GIANT BUCK, NO DOUBT? A Michigan Bell Telephone installer repairman, Bob Kronberg, is trying to whittle a deer story down to size, but has had some difficulty in convincing his friends that the story was actually fabricated in a Liar's Club contest to win a prize.

The Sault Ste. Marie *Evening News* carried a story with a St. Ignace dateline reporting that a telephone man had been saved from a rampaging deer by a bundle of alfalfa. The telephone man, when he saw a buck charging, took refuge on his pole. He climbed all the way to the top, and glanced back just in time to see another man appear with a load of hay, which he threw on the ground. Tempting alfalfa changed the course of the deer, which calmly began to munch the hay.

Turned out, the deer was a pet of a ranch owner, and was actually inside an enclosure, though the telephone employe didn't learn this until after his exciting experience. Kronberg had been working in this area at the time of the incident.

•

NO "FRONT" FOR FRONT OFFICE. When queried as to how he happened to receive a telephone call directly from an unemployed mechanic who told the governor of his economic troubles, Gov. John B. Swainson of Michigan answered thus:

"Well, when I got to the office today, the staff hadn't arrived yet, so I answered the telephone."

CHANGE OF ADDRESS

Please notify your local postmaster and the Circulation Department of TELEPHONY of change of address. Change cannot be made without the old as well as the new address. Allow three weeks for change of address to become effective.

Telephony

THE JOURNAL OF THE TELEPHONE INDUSTRY

1901 — 60 years — 1961

March 25, 1961

CONTENTS

IN THE NATION'S CAPITAL 17
By Francis X. Welch

1961 CONVENTION CALENDAR 18

WHICH WAY TO SOUND ECONOMIC GROWTH? 22
By Frederick R. Kappel

TELEPHONY'S ELECTRONICS SECTION 29
By Paul E. Murphy

THE PLANT MAN'S NOTEBOOK 34
By Ray Blain

CLASSROOM INTERVIEWS IN CAL., MO. UTILIZE TELEPHONE AS AID 38

COURTS AND COMMISSIONS 42

THE OPERATOR'S CORNER 48
By Mayme Workman

TEN LOANS APPROVED BY REA TOTAL $4,773,000 50

ANNOUNCE DATES FOR 1961 USITA MARKETING SEMINAR 62

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When planning for the future...
...look to the past

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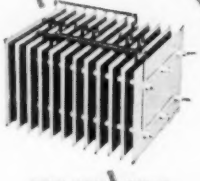
CARRIER SUPPLY UNITS

BAT-TAP D-C VOLTAGE REDUCERS



DRY CEMF CELLS

SUB-CYCLE RINGING CONVERTERS

Today's telephone plant installation must give trouble-free service to the coming generation. Plan for the future with the help of Lorain... join our many satisfied customers whose Lorain equipment has already withstood the test of time.

The line of power equipment developed and manufactured by Lorain is the most complete in the telephone industry. 40 models of Sub-Cycle Ringing Converters, 550 models of Flotrol Battery Chargers, 43 models of Power Supply Units, 13 models of Tone Generators, 48 models of CEMF Cells.

PAST PERFORMANCE IS OUR BEST RECOMMENDATION

LORAIN *Products Corporation* LORAIN, OHIO

LORAIN PRODUCTS (CANADA) LTD.—ST. THOMAS, ONTARIO

DESIGNERS AND MANUFACTURERS
SUB-CYCLE® CONVERTERS
FLOTROL® RECTIFIERS
PARTNERS IN DEPENDABILITY

PROMOTIONAL MATERIAL FOR USERS OF ELECTRONIC SECRETARY® TELEPHONE ANSWERING SETS
PROMOTION TOOLS TO HELP YOU BUILD YOUR BUSINESS WITH THE NEW ELECTRONIC SECRETARY® TELEPHONE ANSWERING SETS

This kit helps you sell your customers...

Here's a sure-fire selling tool for you! A professionally prepared kit that helps you clinch the rental of an ELECTRONIC SECRETARY® set . . . and keep it rented profitably month after month.

This promotional material is packed with every new ELECTRONIC SECRETARY set. Be sure that each subscriber leasing a set receives his kit and understands its function. It contains everything he'll need to take full advantage of his new business asset. There are mats to advertise in the local paper . . . spot announcements for radio or TV. There are postcards and bill stuffers to send to his customers . . . even a sheaf of publicity releases.

You can cash-in on this promotion by showing every prospect how the material will help him turn a 9-to-5 business into a 24-hour-a-day service . . . all with a minimum of effort on his part.

For more information about ELECTRONIC SECRETARY sets or for additional sales promotion material, phone or write either of your distributors.

and keep them sold on

ELECTRONIC SECRETARY®

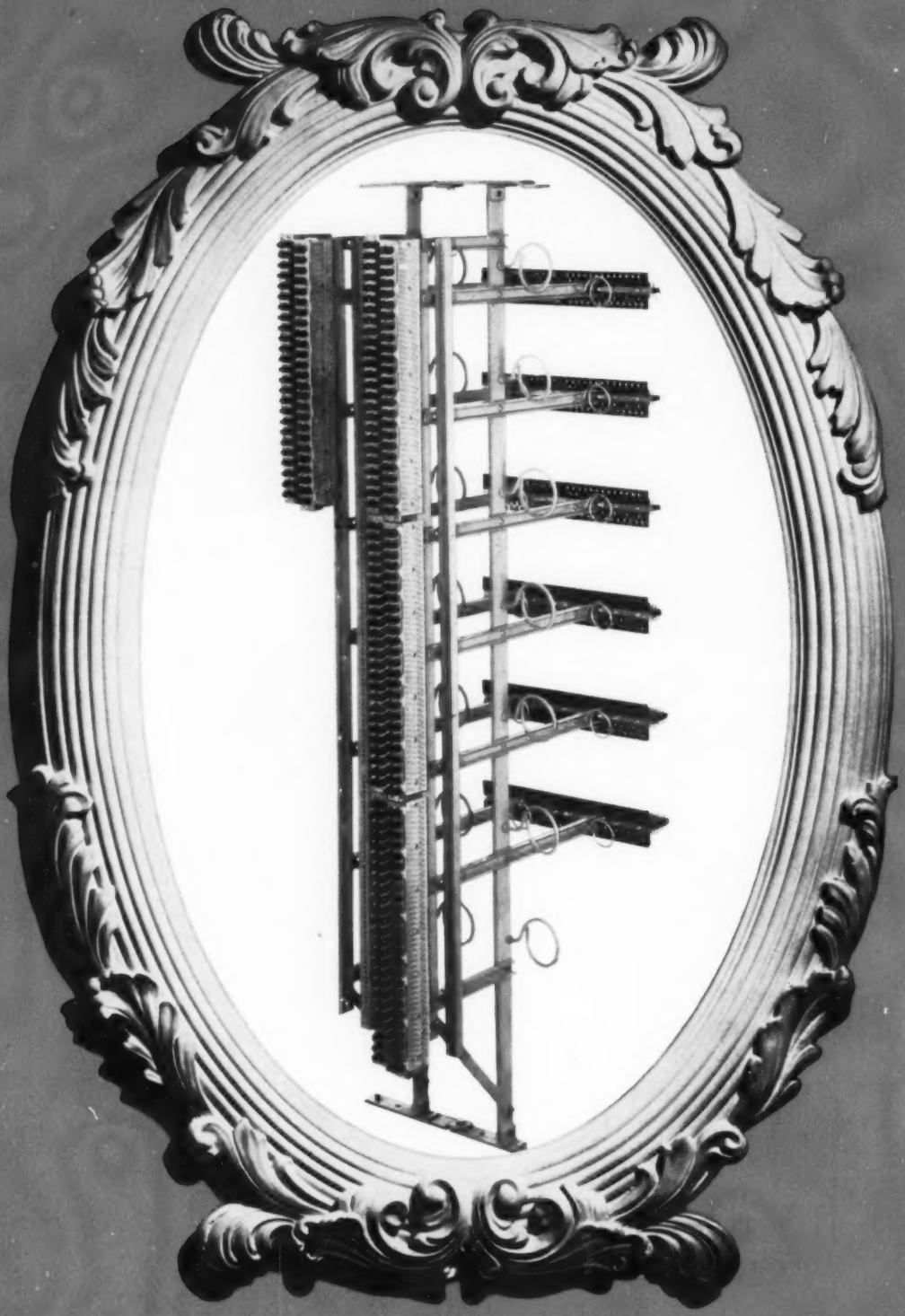
Phone Answering Sets

Electronic Secretary Industries, Inc., Subsidiary of GENERAL TELEPHONE & ELECTRONICS

distributed by

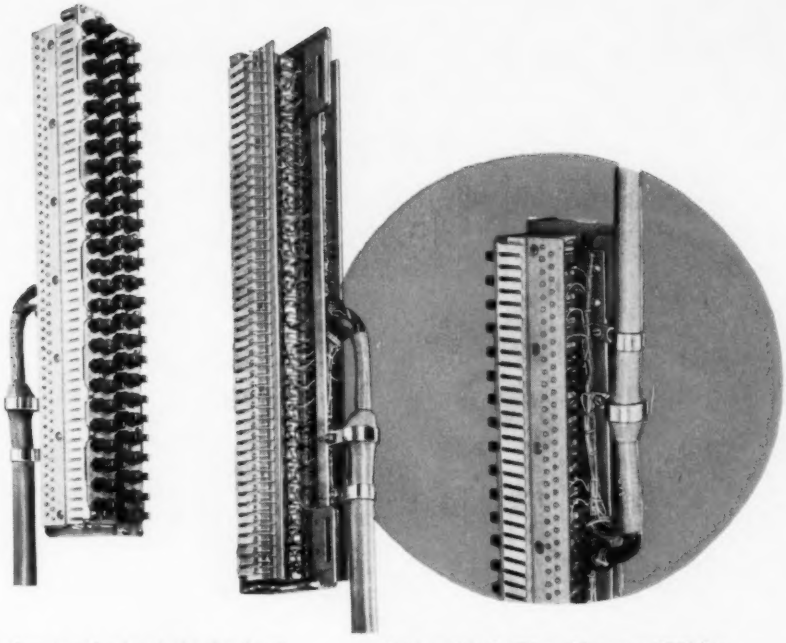
AUTOMATIC ELECTRIC SALES CORPORATION
400 North Wolf Road Northlake, Illinois

LEICH SALES CORPORATION
427 West Randolph St. Chicago 6, Illinois



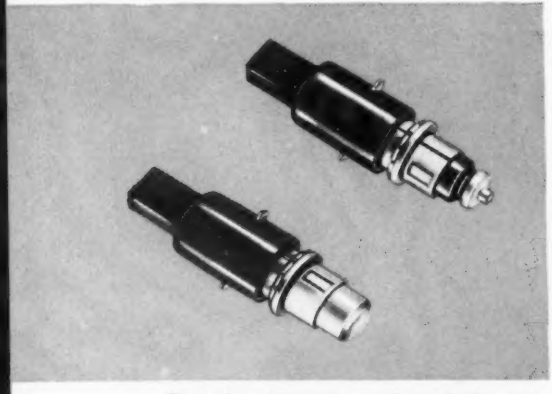
A *Reliable* image of improved main frames

The R300 Connector has a cast resin body, metal faceplate and twistlock inserted protector units. Circuits may be opened without removing the protector units.



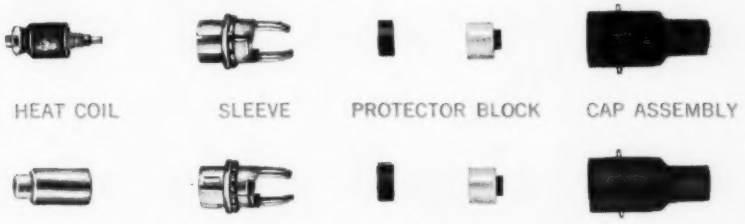
Stub cable is wire wrapped to projecting terminals at the back of the connector and is secured to an aluminum reinforced bar. All R300 Connectors are supplied with mounting brackets suitable for attaching to Main Frame protector bars.

Stub cable is 22 or 24 gauge PVC insulated, available in 101 or 51 pair; it is light, flexible and easy to handle.



Protector elements and contacts are completely enclosed in a dust-free high grade plastic assembly.

Catalog No. 3004 protector unit has a standard central office type heat coil and a .004 carbon-to-carbon air gap protector.



Catalog No. 3000 protector unit has a metallic dummy heat coil for use where heat coil protection is not required.

Reliable Type R300 Connectors and Main Frames are designed for installation in new or existing central office main frame rooms as well as P.B.X., P.A.B.X. and sub-exchanges. Connectors may be ordered in 50 or 100 pair banks with or without cable stub.

Light and compact, the 100 pair connector can be installed by one man in just a few minutes. Unpacking the R300 Connector is also a one-man operation; it is easily removed from a light, strong corrugated carton without the use of tools.

Write for detailed information in Reliable's Product Data Sheet No. 32.

Reliable

ELECTRIC COMPANY • Franklin Park, Illinois

A Symbol of Integrity Since 1909

Boost Your Profits With
LEICH PABX's

It's Here! Leich's

LEICH GENERAL SYSTEM
Subsidiary of
GENERAL TELEPHONE & ELECTRONICS

"Extra-Service" 80A-S PABX

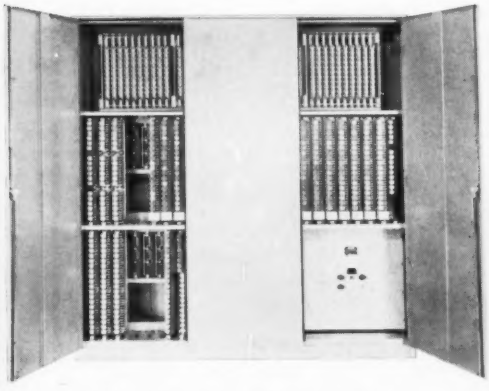
Now--you can give your subscribers the "extra service" of Leich's popular 40A PABX in an 80-line stock board.

With Leich's new 80A-S PABX, inside, outgoing, and city trunk transfer calls are made without help from the attendant. Even consultation-conference service is a standard feature at no extra cost. Regular dial telephones without special buttons or equipment are used.

A modern keyset turret keeps incoming traffic moving. By simply depressing three keyset buttons in sequence, the turret attendant extends incoming calls quickly and easily.

All-relay Leich Dial System assures worry-free service, saves space.

Boost your profits with Leich PABX's. Write today for complete information.



COMPACT SWITCHBOARD BAY IS 72 INCHES WIDE, 15 INCHES DEEP, AND 72 INCHES HIGH.

26-TRUNK KEYSET TURRET KEEPS INCOMING TRAFFIC MOVING.

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manufacturers of telephones, switchboards and related apparatus since 1907

Safety's Still First

By ROY SAVAGE

Roy Savage, director of supply sales, Automatic Electric Sales Corporation.

At numerous times throughout the year, the National Safety Council increases its efforts to make each of us more aware of the importance of safety. Highway safety is usually given the greatest emphasis, but safety at home and on the job are stressed also. Do these campaigns really make us more aware? And if they do, does increased awareness cut down on accidents? Both are moot questions currently under discussion by psychologists and safety experts.

The safety people say that while the total number of accidents continues to climb, the accident rate has been reduced. The psychologists dispute this statistical explanation and offer one of their own. Many people, they say, are incapable of facing unpleasant possibilities, and will tune their minds out when presented with the subject of accidents, possible disfiguration or death.

To support their view, the psychologists point to the experience of one of our leading automobile manufacturers. A few years back, this company decided to promote that season's line of cars as the safest autos people could drive. They began an advertising campaign which promoted seat belts and safety glass as standard equipment. Their sales dropped drastically, and they quickly switched their advertising approach. The psychologists explain that for many people, the company's cars had become symbols of an unpleasant possibility.

INDUSTRY'S RECORD GOOD

But what of the very good record that industry has made in this area? The businessman does not run from this problem. He accepts the challenge and acts to solve it. He uses the suggestions of the NSC concerning safe practices and safety devices. He wages a constant struggle against accidents and carelessness on the job. He inspires the same attitude in his men. The result is a greatly improved safety record.

The same businessman who may refuse to listen to warnings that affect him or his family personally, may very well heed the same warnings when they affect his company or his employees. This, according to the psychologists, is a difference between personal and business or social consequences. The businessman can see the merits of safety campaigns objectively, and he acts unemotionally to provide safety for his people and his plant.

Another factor in the businessman's favor is his desire to do the job the right way. If his employees share this desire, their safety record is bound to improve, because the correct way is always the safe way.

We don't know who has the right answer. Both views have some merit and the truth probably lies in a combination of the two schools of thought. Although the psychological answer may be correct, we feel that constant safety reminders must have some positive affect on people willing to heed them, and safety campaigns and slogans should be encouraged.

One thing we do know. Business has made the best safety record, and utility companies, especially telephone companies, have been leaders in the effort. This is due, not only to the awareness of the telephone man, but his use of safe practices and safety devices. Still more encouraging are the many new products being developed to improve safety standards still further.

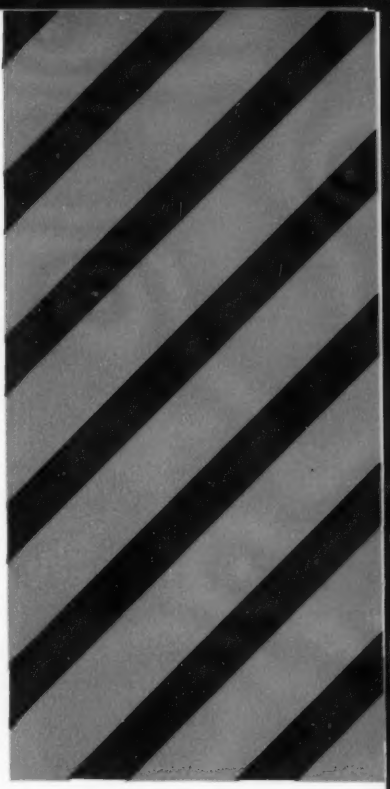
IMPROVED DEVICES

The latest safety ladder for power and telephone companies is made of wood and covered with a thick coating of fibre glass. These two materials combine high resistance to electrical charges, durability and long life.

Highway and roadside construction is an area that is mushrooming with improved safety products. The guiding of traffic around men at work is made more feasible by the use of flashing lights, flags, traffic cones and flares. These warning signals give the motorist ample time to adjust to the unusual road condition. Used properly, these devices can move traffic smoothly and safely with a minimum of inconvenience to motorists and work crews.

Proper placement of these devices is essential to their success. For this reason we recommend two NSC pamphlets* on the subject. These pamphlets show how safety can make all our jobs better jobs. They should be of great interest to anyone who wants to improve the safety standards of his company and his community.

*Copies available by writing Mr. Savage at Automatic Electric Sales Corp., Northlake, Illinois



COLORFUL TRAFFIC CONES for better traffic control. Help guide flow of traffic smoothly. Protect motorists and work crews. Vivid yellow and red colors.

warehouses:

Northlake, Illinois — Fillmore 5-7111

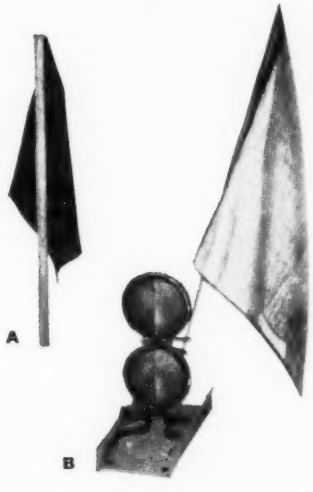
2915 Moore St., Richmond 21, Va. — ELgin 8-9280

PROTECT YOUR MEN AGAINST ACCIDENTS

AE has everything you need for safety first

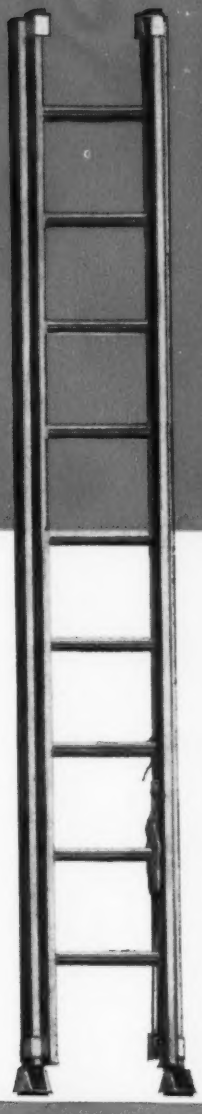
Here are just a few of the improved safety devices that keep your men safe while they work. There are others, of course... in stock... in our warehouses. All are designed for maximum protection. When safety counts, contact your AE representative.

FLASHING LIGHTS for use with barricades, vehicles. Light is detachable for use with tripod for heights up to 8 feet. Compact, lightweight unit flashes clear red beam. Batteries last up to 300 hours.



A. DANGER FLAGS. AE stocks a complete line of danger flags, including the new reflector-type nylon flag. Any flag for any use—self-standing, pole-mounting or on barricades and vehicles. AE's got 'em all.

B. VARI-FLARE REFLECTORS with Stimsonite lenses. Reflect 24-candle power over ½ mile in two directions. Four times brighter than average tail light. Flags are for daytime use. Base is stable even in high winds.



FIBER GLASS SAFETY LADDERS. Sturdy, long-lasting fiber glass coating over non-conductive wood for top safety. Bright yellow color is easy to see at a distance. Safety shoes guard against slipping.

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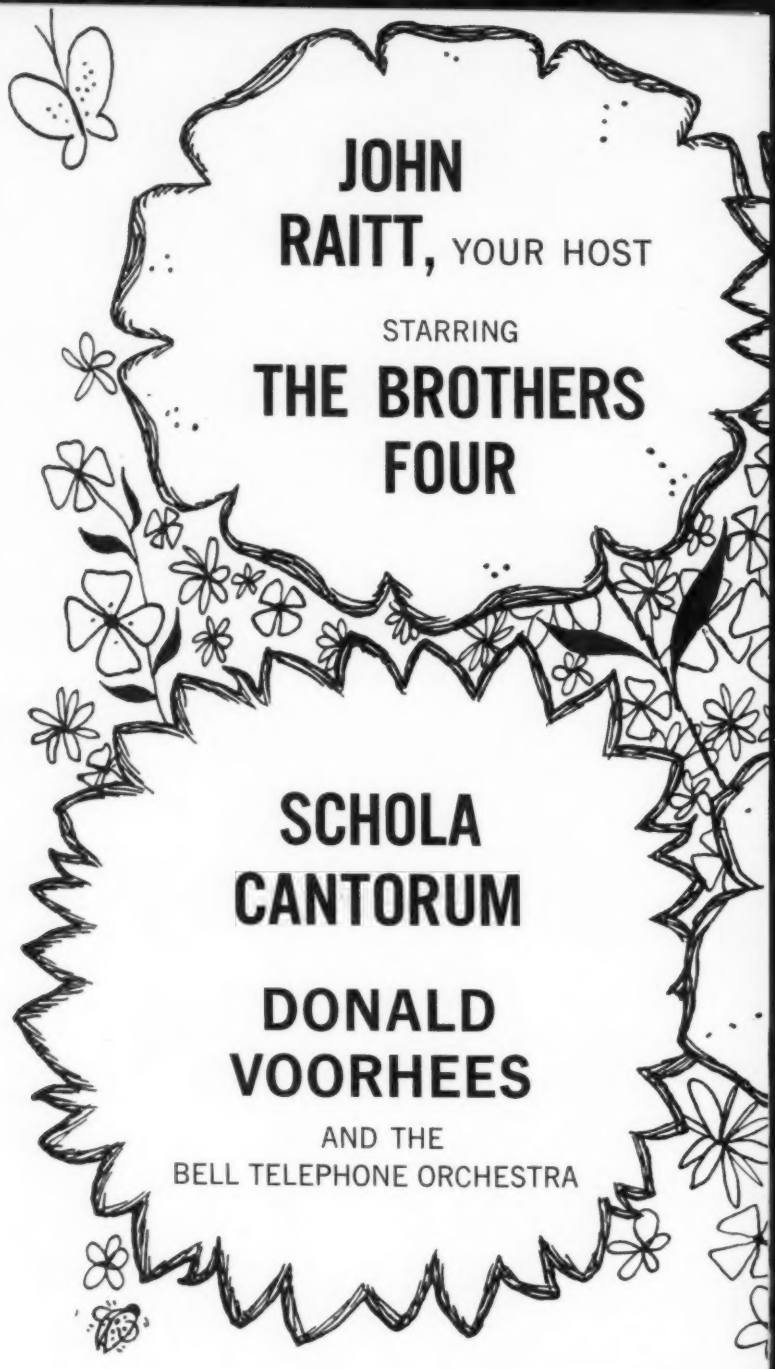
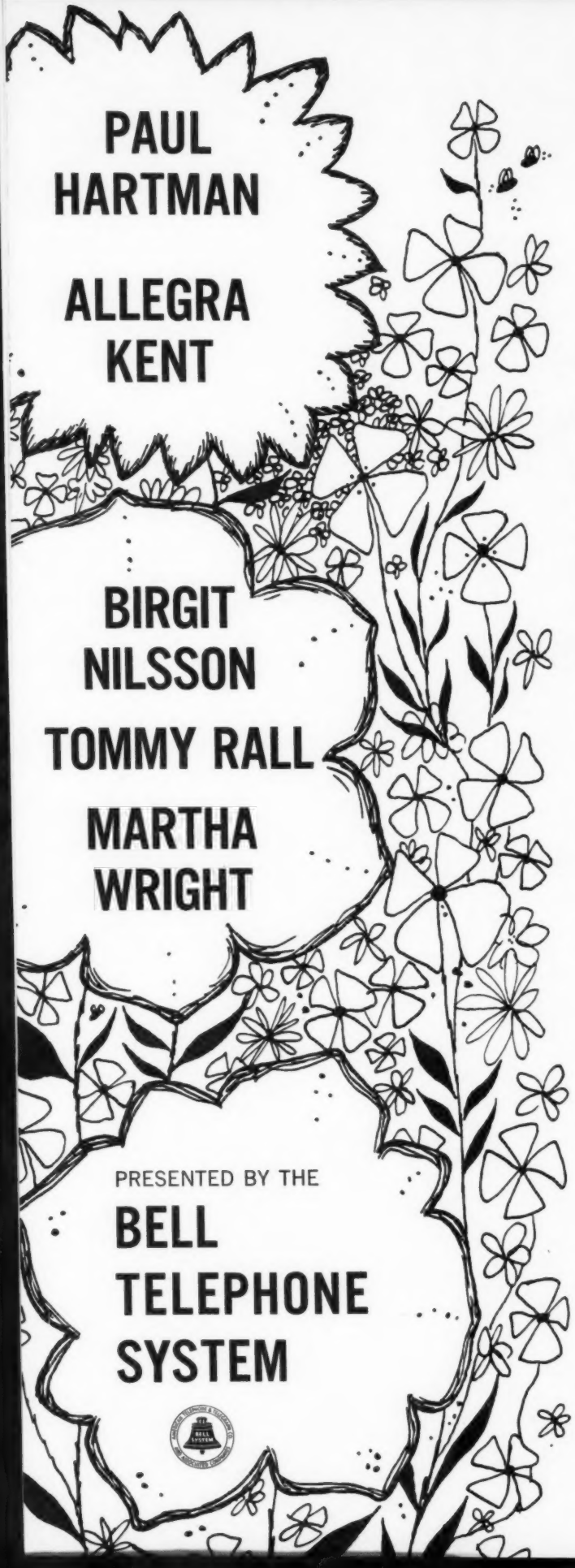


THE SIGNS OF SPRING



A musical welcome
to Easter
and spring

BELL TELEPHONE HOUR

FRIDAY, MARCH 31
NBC-TV · LIVE and IN COLOR

It's spring. Boy meets girl.
Suddenly the world is filled with music.

And the Bell Telephone Hour for Friday, March 31, brings you the music of spring.

"The Signs of Spring" will tell the story of love in many colorful ways. In one exciting scene, the color cameras will capture the pomp and pageantry of a circus.

In another production number, Miss Nilsson will sing some of our most loved Easter songs.

Complementing the spring theme of this program will be a commercial on the "Spring Phone Fair." Many of the Bell System's new services and equipment will be demonstrated during this message.

Be sure to welcome "The Signs of Spring" into your home on the Bell Telephone Hour, Friday, March 31. For time and channel, please consult your local TV listings.

Gould Stationary Battery Jars Won't Crack or Break

During shipping and handling, you can be sure that the outer jar—and the battery itself—will remain unharmed despite abuses normally encountered in receiving and installing stationary batteries. New Gould Plastrite Jars have a higher tensile strength, will resist more impact than ever before.

Lighter, smaller, more resistant to heat. New Plastrite Jars are the perfect outer cover for your Gould Stationary Battery. Less weight makes them easier to handle; reduced size saves up to 40% floor space; higher heat-resistance and better elongation characteristics eliminate bulging, warping, and loss of shape.

Redesigned inside and out. Plastrite Jars are one of many new advances made in Gould Stationary Batteries . . . batteries with quick, reliable current when you need it for either full float or cycle operation. Contact your Gould representative and ask him for the complete story on Planté, Calcium or Kathanode batteries. Call or write your local Gould office listed under "Batteries—Industrial" in the Yellow Pages. Gould-National Batteries, Inc., First National Bank Building, St. Paul 1, Minnesota. In Canada, write to Gould-National Batteries of Canada, Ltd., 1819 Yonge Street, Toronto, Ontario.

New Stationary Batteries in Plastrite Jars offer the same long life for which Gould has always been famous.

***More Power to You from* GOULD**

TELEPHONY

IN THE NATION'S CAPITAL

BY FRANCIS X. WELCH, WASHINGTON EDITOR
AND EDITOR, PUBLIC UTILITIES FORTNIGHTLY

Congress taking steps to control operations of federal regulatory commissions instead of White House. Missouri college uses long distance telephone to conduct interviews in classrooms. Western Union opposes TELPAK in FCC petition.

IT LOOKS AS if Congress, rather than the White House, will be having the controlling say about how the regulatory federal commissions should operate. This is not exactly the way the situation looked a couple of months ago. At that time, it will be recalled, President Kennedy's chief adviser on regulatory commission matters, James M. Landis, suggested that a White House "Overseer" should be delegated the responsibility of "coordinating" the regulatory commissions.

This suggestion was not received with enthusiasm on Capitol Hill. Your correspondent has previously pointed out, in this department, how such a set-up might conceivably result in some degree of White House domination of the regulatory commissions on policy and even to the extent of affecting particular cases. Needless to say, there are plenty of critics of the way the federal regulatory commissions operate on Capitol Hill. That is what the House Legislative Oversight Sub-committee has been doing for the past three years. But when it gets down to the question of who is going to swing the big stick an entirely different issue arises. Congress has long been very jealous of its control over these commissions and it intends to keep it that way.

The reasoning back of the case for congressional control of the commissions is simply this: Congress set up these commissions in the first place. Congress enacted the laws under which they operate. Congress spelled out the objectives and purposes for which they were created. None of these commissions—including the Federal Communications Commission—are authorized to do a single thing that Congress could not do itself by legislation, theoretically at least. So, in a sense, the commissions are simply extended arms of Congress, sitting continuously to decide matters which Congress could not, as a practical matter, either spare the time to decide or to set up the organization within itself to handle matters directly.

All this is not to suggest that there has been any knock-down and drag-out fight going on between Congress and the White House. But there has been back-of-the-scenes discussion going on ever since the Landis report was filed originally with President Kennedy before he was even inaugurated.

Congressional leaders made it clear to Mr. Kennedy that the Landis recommendation—that the White House should control or "coordinate" (to use a more euphemistic term)—would have little chance of getting by the White House. Of course, there is nothing to prevent President Kennedy from setting up his own White House adviser or assistant to function as his contact with the regulatory commissions. That was done under Eisenhower and under previous administrations, to some extent.

In any event, it now looks as if Congress is coming out on top of this little policy argument over who is the boss, in a manner of speaking, of the regulatory commissions. This was seen in the recent announcement by Representative Harris (D., Ark.), discussed in this department last week, that he would personally head the new permanent House Sub-committee on Regulatory Agencies. Harris has been working on this proposition ever since the White House released the Landis report containing the recommendation about a White House "Overseer." Even as early as his press conference on Feb. 8, President Kennedy showed some signs of backing away from the Landis proposal, when he said that he was "not completely sure" it would be wise to set up a new executive office to oversee the regulatory agencies.

Harris said on Mar. 3, in announcing that he would set up a permanent subcommittee, that it would exercise "continuous watchfulness over the way in which the agencies administer the law." He added:

"I have no intention of abandoning or neglecting the responsibility of the Committee on Interstate and Foreign Commerce in this important field. Our committee is familiar with the problems and has the facilities to deal with them.

"The major regulatory agencies whose activities are under the jurisdiction of our committee and 'independent agencies' of the government are an arm of Congress and, therefore, primarily subject to the legislative oversight of our committee."

The House watchdog unit succeeds Harris Legislative Oversight Sub-committee, which went into such things as rigged television quiz shows, ex parte (private) dealings with regulatory commissioners about pending cases, and the favored treatment given some companies and individuals.

The feeling appears to be that enough examples of administrative weakness and laxity have been uncovered to amply demonstrate the need for corrective

action and that the new unit should devote much of its time to preparing remedial legislation. "We should concentrate," Representative Harris said, "on developing concrete legislative proposals and administrative measures to eliminate bottlenecks and make certain that the laws keep pace with the changing needs."

This was Harris' aim in most of the latter part of the old sub-committee's inquiry, but the sub-committee's investigators kept turning up new instances of regulatory defects or misdeeds requiring hearings. Most of these investigators have been let go. The new group, Harris said, "will require the services of some technical staff, but expects to utilize the highly competent regular professional staff of the parent committee."

A Monthly Report from Commissions

What will the Kennedy administration do now? It will do plenty about the regulatory commissions. But it will not be a two-way street along the lines which Dean Landis evidently had in mind when he made his report. Instead, the Kennedy administration will exercise close supervisory control over these agencies to the extent of obtaining from them complete, accurate, and up-to-the-minute information about what they are doing and how well and promptly they are doing it.

Early in March, a White House memorandum went out to each commission chairman calling for short and pithy monthly progress reports by their agencies. "The President is most interested," the memorandum says, "in being kept closely informed on important policy and administrative action taken or proposed. He is particularly interested in having major problems of the agency flagged for his attention." The object of these reports will be for the personal information of the President. It was made clear that they should not be bogged down by statistics or generalities.

The memorandum said they "should be kept as specific, incisive, and brief as possible—preferably but not necessarily under two pages. Matters highlighted in these summaries and of particular interest to the President can later be more extensively developed at his request." This is believed to be the first time in the history of the regulatory commissions that they have been told to file up-to-date progress reports with the White House, or Congress, or anybody else.

It is especially noteworthy, however, that President Kennedy's memorandum cautiously avoided any suggestion of trying to influence pending decisions before the regulatory commissions—otherwise it might be accused of undermining their independence. The memorandum specifically pointed out that mention of pending cases should *not* be contained in the monthly reports.

Furthermore, these monthly progress reports are not supposed to replace other reports which the commissions have been making to Congress or to the White House. Heretofore the usual practice for these regulatory commissions, including the FCC, has been to make an annual report to Congress (usually about six months or more late in its coverage) containing an over-all résumé of what the commission has been doing during the year. Such reports have often been cluttered up with voluminous, heavy-handed recitals of how many cases were disposed of, and what such cases pertain to, and what developments have occurred during the year within the industries regulated. Couched in the language of bureaucratic obscurity, these reports were often only a half-hearted attempt to show Congress how the appropriations for the commission were being spent. It is easy to understand how President Kennedy wanted no part of such sleep-producing documents which usually conceal more than they reveal.

The regulatory commissions, which have been told to report monthly on the new short and snappy basis include the following: Interstate Commerce Commission, Federal Power Commission, Federal Communications Commission, Federal Trade Commission, Civil Aeronautics Board, Securities and Exchange Commission, and the National Labor Relations Board.

Kennedy Influence to Grow

The new Harris sub-committee to operate in this area includes the following Democrats in addition to Harris himself: Rogers (Tex.), Flynt (Ga.), Moss (Cal.), and Rogers (Fla.). The following are the Republican members: Bennett (Mich.), Springer (Ill.), Younger (Cal.), and Thomson (Wis.).

But Mr. Landis is still very much in the picture as the President's chief adviser. He is now reported to be preparing for President Kennedy a draft of a special message on regulatory agencies the President will submit to Congress early next month. The message will praise the regulatory concept, which developed significantly during the New Deal era. It will outline the

Convention Calendar
1961

Association	*Date*	*City*	*Hotel*
Nebraska	Apr. 5 and 6	Lincoln	Cornhusker
Mississippi	Apr. 17	Unannounced	Unannounced
Ohio	Apr. 18 and 19	Columbus	Deshler Hilton
Wisconsin	May 2 and 3	Milwaukee	Plankinton House
Indiana	May 10 and 11	Indianapolis	Claypool
Illinois	May 17, 18 and 19	Peoria	Pere Marquette
Kansas-Missouri*	May 22 and 23	Kansas City, Mo.	Continental
Pennsylvania	June 5, 6 and 7	Pocono Manor	Pocono Manor Inn
Washington-Oregon*	June 15 and 16	Victoria, B. C.	Empress
New York	June 19, 20 and 21	Schroon Lake	Scaroon Manor
California	June 26, 27, 28, 29 and 30	Honolulu, Hawaii	Hawaiian Village
Alaska	Aug. 21, 22 and 23	Palmer	Unannounced
Tennessee	Sept. 6 and 7	Nashville	Hermitage
Arkansas	Sept. 11 and 12	Hot Springs	Arlington
Rocky Mountain	Sept. 13, 14 and 15	Boise, Ida.	Owyhee
Georgia	Sept. 14 and 15	Jekyll Island	Corsair Motel
Michigan	Sept. 19, 20 and 21	Grand Rapids	Pantlind
Nevada	Sept. 19, 20 and 21	Elko	Stockmen's
USITA	Oct. 8, 9, 10 and 11	Chicago	Conrad Hilton
South Carolina	Oct. 23 and 24	Clemson	Clemson House
Virginia	Oct. 26 and 27	Roanoke	Roanoke
Oklahoma	Nov. 8 and 9	Skirvin	Oklahoma City
Florida	Nov. 26, 27 and 28	Miami Beach	The Carillon
North Carolina	Dec. 4 and 5	Pinehurst	Carolina

*Joint meeting

administration's plans for future proposals to change federal securities, transportation, communications, and other laws administered by the agencies. And it will describe plans for an administrative conference much like the Judicial Conference of the United States, whose recommendations on legislation and appropriations for the federal courts carry great weight in Congress.

The administrative conference would provide a permanent forum in which agency officials, lawyers, and the general public could hammer out legislative recommendations. Such recommendations probably would have more influence on Congress than the agencies, never speaking in unison, have had by themselves.

Another basis for believing that, over the long range, President Kennedy's influence with the regulatory commissions will grow rather than diminish relies on his power of appointment. As long as it is up to the President to name the membership of these boards —a new one every year, and generally oftener to take care of resignations and death—the power of the President to impress his views on the regulatory boards will obviously become more pronounced with each passing year. By the end of 1962, White House appointees are likely to be in numerical control of most, if not all, of these commissions.

So, while Congress may continue to exercise top authority over what the commissions should do, and how they should do it, the White House will have the real say so about the men who will be doing the job. This is an old success formula in Washington—"it is not what you know, but *who* you know" that counts in the end.

Western Union Hits TELPAK

The recently FCC approved TELPAK, authorizing the American Telephone & Telegraph, to rent the use of broad "electronic communications highways" to its large industrial users of wire services, has hit some of the competition in this field pretty hard. Western Union Telegraph Co., for example, is not going to take the new set-up without a struggle. It has filed a petition with the FCC, asking for the following relief from what Western Union sees as a threat by AT&T to capture a "complete monopoly" of the private wire business:

(1) Western Union wants the FCC to investigate TELPAK rates, claiming that they are too low.

(2) It wants the FCC to make certain changes in TELPAK services, such as a rate change to bring line charges more into line with traditional direct airline mileage, rather than allowing a combination of circuitous routes to TELPAK customers.

(3) The FCC should order AT&T to keep detailed records of TELPAK operations, so that Western Union can have access to such information for possible court appeal, even if the FCC otherwise turns down Western Union's petition.

(4) Western Union, in the interest of fair and equal treatment, should be permitted to furnish voice or telephone communication (which it cannot now do) in view of the fact that AT&T now renders a combination of voice and wire services through TELPAK.

Western Union admits it is already losing some of its private wire customers to TELPAK. Its proposed 50 million dollar construction program for setting up a coast-to-coast microwave system was said to be in jeopardy. This program was started in 1960 and is scheduled for completion in 1962. But if the telegraph company is faced with what it regards as ruinous competition from TELPAK, it may have to halt the work.

Western Union does not deny that TELPAK, which rents these "highways" capable of placing up to 240 "voice grade" circuits at the disposal of customers using it for any combination of telephone, facsimile, teletypewriter, etc., is cheaper than services available from Western Union. Indeed, the telegraph company claims that the wire savings to TELPAK customers are even *in excess* of what the AT&T previously suggested to the FCC would be the case.

So, Western Union thinks that the only way it can hold on to its private wire business is to offer comparable service. To do this, the telegraph company says it needs authority to transmit voice or telephone communications. It claims that its new microwave system will permit satisfactory high quality transmission of voice traffic. The nation's private wire service, as a whole, is estimated at 180 million dollars a year. And Western Union says the AT&T will get a monopoly on it, if the FCC doesn't do something about it.

Education by Long Distance Telephone

The telephone business ought to pick up a nice couple of dollars if a novel system of education in current events and political economy being tried out at Stephens College in Missouri is copied elsewhere. Stephens College, which is a girls' school, thinks very well of this innovation and the girls are cheering for it. Last month they ran up a $1,200 long distance telephone bill. And doubtless the telephone company is cheering about *that.* (See page 38.)

But the whole idea is based on using the long distance telephone for conducting an interview with leaders of government, business, and the arts. In this manner a whole class is able to pick the brains of a government official sitting at his desk in Washington, or an industrial tycoon sitting in his office in New York, or some educator or artist located elsewhere, who might have something to contribute to the class curriculum.

Actually the use of the telephone in this manner saves the college money, according to Harold Rubin of Stephens College in reporting on the project in the professional journal *College and University Business.* It saves the college money because it eliminates traveling expenses, lecture fees, the efforts of committees, and other program planners. It goes right to the heart of the matter by providing almost vis-a-vis interviews in which a whole class can take part.

Credit for originating this idea is given to Professor James Burkhart of the Stephens College's social-science faculty. The telephone company at Columbia, Mo., was called upon to install in Burkhart's classroom, for a course in American government, a telephone hooked up to a microphone placed on a table in the center of the room, plus an amplifier and a loud speaker. Professor Burkhart developed a list of important people in government, labor, management, politics, agriculture, and the cultural arts who would be available for an interview by long distance.

An example was given of such an interview with Norman Cousins, the editor of the *Saturday Review of Literature.* He was asked such questions as: Is the military build-up a compulsive race toward war? What are the political effects of weapons themselves? Is there such a thing as a clean bomb?

The call to Cousins in New York lasted 25 minutes and cost $14.35.

In the business-education course, students queried such persons as Alice K. Leopold, then assistant to the Secretary of Labor in Washington, D. C. (26 minutes, $10.70) and Mary Roebling, member of the board of directors of the American Stock Exchange (13 minutes, $6.40).

Once the students took part in a three-way interview. Participating were Dr. Jaroslav Pelikan, professor of historical theology at the University of Chicago; the Reverend Walter Ong of St. Louis University, and Dr. Lewis Spitz, associate professor of history at the University of Missouri.

The 36 minute open-end theological discussion cost $17.25. The students spoke to one woman political leader as she waited for a plane at the Kansas City airport.

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Which Way to Sound Economic Growth?

*By Frederick R. Kappel**

DETROIT's opportunities and problems are our (Bell System) concern, as they are yours. We share the common desire and determination to increase the one and overcome the other. We are keenly aware, as you are, that the story of Detroit reflects some of the most shining achievements of American industry—and also some of the most perplexing difficulties of our economic system. Our responsibility in the Bell System is to create and provide communication services that will make the utmost contribution to the progress of this great city and the country as a whole. It is out of that concern that I shall talk for a few minutes on the subject of economic growth.

This is a tough subject. When I study what the economists have to say about it, one of the things that strikes me most is how hard it is for any two of them to agree. However, notwithstanding all the differences of opinion, in the views I read that make the best sense to me, a few fundamentals seem to come through repeatedly.

Economic Growth Fundamentals

To begin with, we get economic growth only by applying our brains and energy to create capital and then use it as well as we know how.

Second, economic growth has its price like anything else. It is nothing we shall ever get for free.

Third, the steadier growth can be, the better. It is bound to fluctuate some but that is no virtue.

Fourth, stable prices promote sound growth and any marked inflation impedes it.

Fifth, the role of taxation is crucial and much can and should be done to overhaul the tax system in ways that will stimulate economic growth.

Maybe the economists will tell me now that there are other things they do agree on. But whatever their agreements or differences, these are some of the basics of economic theory that strike me as sound. The rest of what I have to say today will reflect my own thoughts as a working business manager. As I go along, if I refer to some of the things we are trying to do in the Bell System, that is not to grind an axe but to discuss my theme in terms I am familiar with. I admit to being an enthusiast about our business. When I was talking about it down in Dallas one day last fall, a reporter put in the paper that I sounded like a man talking from the hurricane deck of a bucking bronco. But I guess that is just a Texas way of describing a man when he gets going.

F. R. KAPPEL

Being in a business that has grown and grown ever since it started, it is second nature for me to have growth on my mind. Ever since the telephone began, and markedly since World War II, we have grown considerably faster than the economy as a whole. And I think I know some of the reasons why.

Telephone Industry Growth

Number one, people need to communicate, and fast and abundant communication services have great social utility.

Number two, we have had exciting goals to work for. Years ago, for instance, the leaders of the business set the goal of universal telephone service—and this at a time when they hadn't even begun to find out how to reach such a goal.

Number three, we have made basic research a keystone of our business. Research, innovation, technical development, the search for better operating methods and greater efficiency—these have been continuous through good times and bad.

Number four, we have striven by words and by works to convince the country that a good profit is in everybody's interest. By this we certainly do not mean all the profit we can get. What we do mean is a profit that will generate plenty of capital—attract able people into the business and spur their best effort—stimulate innovation and risk-taking—and enable us to carry out balanced long-range programs that level out employment and spell lower costs to consumers as well as improved service.

Number five, we are convinced that it is the people in our business—all of them together—that make it alive, vital, and growing. Our enterprise, and all enterprise I feel certain, will grow and contribute to the nation's progress only as the people in it study, learn, and dream—only as they put their minds and hearts into their work—only as they get personal satisfaction from doing a first-rate job.

I could add more numbers but these are enough to lead to the basic question, which is—why is economic growth

*Mr. Kappel, President of American Telephone & Telegraph Co., presented this address on Feb. 20, 1961, before the Economic Club of Detroit.

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desirable anyway? Why is it important? Why is it necessary?

There are a lot of people nowadays running on the growth ticket, so to speak. I am not sure they all want it for the same reasons, or the best. If some want growth just to hike wages —or if others want a fancy dress costume for profits on stilts—or if growth gets to be a gimmick for economic mystery men—then it's not growth, it is growthmanship.

Economic growth is important to our country's position in the world. It is important to our morale, to our confidence in ourselves. But even more essentially, we need it so that people will have a better life. Partly this is a matter of material well-being. However, the non-material aspects are of equal consequence. Economic growth pays for education. It pays for government services. It makes leisure possible. It gives men and women the chance to broaden their personal lives.

In fact, we can state the need for economic growth much as we describe the need for growth in an individual. How do you measure a man's vitality, his value to himself and to others, the promise he shows for the future? Largely by your sense that this is a man who is growing and will keep on doing so. If he has stopped growing, the minute you see this you know with regret that you have to write him off. In the same way, if we do not have economic growth, we are on a dead-end street.

I also think we are on a dead-end street if we go for growthmanship instead of growth, and leaders in business, or in government, or in the unions start pulling rabbits out of the economist's hats. Apropos of this, let me comment on a couple of ideas that have had considerable airing recently.

One is the notion that we can get faster economic growth by arbitrarily setting a goal of 5 or 6 per cent a year and then going to it. This turns out to be nothing but a new recipe for government spending, either with or without taxes to pay for it. Without the taxes we would certainly get inflation, and aside from the fact that this is too high a price to pay, the prospect is that inflation would put a drag on growth, as I said earlier, rather than encourage it. As for getting the amount of taxes that would pay for enough government spending to beef up growth to 5 or 6 per cent a year—this is just day-dreaming, and as far as I know nobody has yet figured out how to make it anything more.

Taxes and Growth

Now I strongly believe that measures to broaden the tax base, increase incentives, and encourage business to invest more rapidly in more efficient plant, would have a wonderful effect on growth and increase government revenues in the process. I wish the country would stop talking about this and get to doing something. But I don't believe there is any magic giant step. And it is magic that people are looking for when they say, "All right, if we can't get the taxes to pay for expenditures that increase growth, we will push the growth way up first—just like that—and this will produce the taxes." This isn't a program. It is pure wishing.

The second and related idea is that the manner of our growing should be centrally decided and directed. If you peel off the language that surrounds this concept, it means simply that some United States *Gosplan* should decide in its infinite wisdom how many telephones there ought to be, how many automobiles, how many schools, how many steel mills, how many housing developments, how many lollypops, how many and how much of everything—and when. I think that when we buy this, we sell out America. However, I don't think for a moment that Americans will ever buy it. I simply do not believe that the men and women of this country can be coaxed into trying for economic growth on order—and as ordered.

Growth Philosophy

"We must grow as a business that is regarded as alert, efficient, and always up to date.

"We must grow as a business that knows how to make improvements in service pay.

"We must grow as a business that can meet competition wherever it may develop.

"We must grow as a business in which ideals of service and marketing talent and zest for discovery all meet and mingle and strengthen each other." — FREDERICK R. KAPPEL, *president, American Telephone & Telegraph Co.*

But could I be wrong? Could it be that the bent toward statism is even stronger than we think? Here we have in this country a tradition of political and economic freedom that has brought about accomplishments unmatched in any other time or place. Yet I can't help asking some of our professors, "How do you expect private enterprise to have the leadership it will need tomorrow, if you teach our future leaders to distrust it today?" And I can't help asking the heads of some of our universities, "Why is it that in the atmosphere of academic freedom, the teaching seems so lop-sided?"

Questions for Businessmen

But we in business have just as serious questions to ask of ourselves. One of the root reasons for the intellectuals' distrust of private enterprise, not to mince any words about it, is that they see big business organizations as selfish and short-sighted. If we don't want them to take us out in the wild blue yonder—and who in business wants that?—we absolutely must win and keep the respect of the intellectual community. And no one else will ever do this for us. We must do it ourselves —first, by the sheer quality of our performance, and then, as we produce the performance, we must also make it known and understood.

Looking at the business I am in, I feel I must constantly ask:

"Are we doing the right things to contribute to economic growth?

"Are we creating and expanding services that promote the general welfare?

"Are we setting goals that spur us to that end?

"Is our research and development program soundly organized, and is it fruitful?

"Are we making ourselves continuously more efficient?

"Do our labor agreements promote or hamper progress?

"Are the people in the business getting the opportunities they are entitled to, the challenges that capture their interest, and the rewards that befit performance?"

These are too many questions to answer at length after lunch, but let me hit a few high spots. Take for example basic research.

Basic Research Needed

The Bell System began to do research back in the 19th century; we started an organized program more than 50 years ago; and we have been pushing it ever since.

All modern communication systems derive in large measure from that continuing effort—from the development of basic theories of transmission and switching, and the creation of electronic devices and networks.

Another fundamental theory, well known today as information theory or communication theory, enables us to measure the relative efficiency of any communication system and plan our developments accordingly.

Still another basic concept or discovery, the understanding of thermal noise, underlies our ability to communi-

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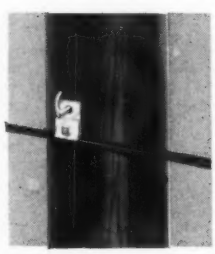

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I might just add that there isn't any end to this. For instance, we have been working for years on a thing we call a long distance wave guide—a very special kind of pipe, about 2 inches in diameter, through which we expect to be able to transmit tremendous amounts of information. Last fall when I mentioned this in a talk I could say that we looked forward to handling as many as 200,000 conversations at a time through one of these pipes. Since then, however, what do we have but a brand-new discovery—a method for handling light waves the same way we do radio waves. This makes us reasonably sure that some day we can handle, through a single pipe, not a mere 200,000 conversations, but conversations by the million, over waves of light.

I give these examples because I am thoroughly convinced that basic research within industry, rightly organized and properly conducted, does pay off. If more industry had more of it, we would have more rapid economic growth. Certainly it costs something, but the cost is not prohibitive. The truth is that basic research is a small part of total research and development costs. And in any case, basic research that really produces will cost infinitely less than expensive development of the wrong things.

Profits and Growth

Now the question of profits: To me this is central to the problem of getting good economic growth. It is central because profit creates investment capital and without this there can be no growth.

Generally, profits have been squeezed in the last decade. If this continues, I think the country is in for real trouble. In the Bell System our most severe squeeze came in the first 10 years after the war. More recently, however, we have been able to get the profit up to a better level.

If we had not been able to do this, I don't see how we could possibly measure up to today's job—or tomorrow's. New capital of a billion dollars a year, more or less, and total construction of 2½ billion dollars a year—this kind of program simply cannot be grounded on skimpy profit.

Moreover, the level of profit has a direct bearing on what we can do to keep construction going fairly evenly through the ups and downs of the business cycle. Back in 1958, for example, notwithstanding recession, we could venture to go ahead with a big program that would pay off in long-run values, and the same thing is true today. Right this minute, there are a lot of people working in the Bell System—and outside our business too, people who supply us with goods and services—for whom there just would not be jobs available if our profits were back where they were in the late 1940s and early 1950s.

As I said earlier, we are not looking for all the profit we can get. But, within the area of good judgment, there is a level of profit that allows you to do what ought to be done. I think it is essential that this be better understood by the country as a whole, and particularly by people who write prescriptions for economic growth.

Increasing Efficiency

Now that I've touched on employment, let me say a little more. No business will contribute to economic growth if it doesn't make itself continuously more efficient. The Bell Telephone Companies, for example, with about 50 per cent more employes today than at the end of the war, are serving nearly three times as many telephones. There are more jobs, yes—about 200,000 more; but each job today has behind it some $41,000 of investment—nearly three times as much as 15 years ago. This investment is represented by increasingly efficient tools and systems, and so we can give much more service, and of better quality, at prices that attract more customers. This to my mind is the essence of growth.

The other day I noticed a report by a Congressional group that said 33,000 jobs had been eliminated in the telephone industry since 1953. So far as the Bell System is concerned, we assume this must refer to specific types of jobs and not to total employment, because our business as a whole employs more people today than it did then. I mention this only to point out that a "report" of this kind is confusing rather than enlightening. We certainly expect that in the long run telephone employment will be higher than it is now. We also expect that there will continue to be short-term ups and downs in the number of people at work. Jobs and ways of working can't stay fixed or frozen. That would create impossible situations.

For example, if we had the same number of operators per 10,000 telephones today that we had when dial service started, about 40 years ago, and if all connections were still made by hand, we would need about a million operators right now. Also, since girls have a way of leaving jobs to get married, we would have to employ about a quarter of a million new operators a year and spend 180 million dollars a year for their initial training alone. But of course this couldn't happen, because we couldn't sell 1920-type service to the 1961 public at the price we would have to charge to pay our wage bill. In short, we would have neither the customers nor the jobs we have today.

Human Problems

The other side of the story is that the human problems produced by technological advance simply cannot be ignored. They profoundly challenge every management. We have to have efficiency and we have to keep increasing it. But if technological advances and rapid industrial change produce human distress, this will seriously interfere with economic growth, and the measures taken to alleviate hardship may interfere with it further.

For instance, some of the current proposals for dealing with the problems of distressed areas, whatever else they may accomplish, will not use resources in ways that produce maximum growth. Yet no political party, Democratic or Republican, will fail to take political action—which may or may not be economically sound—if it appears that industry is not doing the kind of job public opinion will demand. Moreover if some companies do a good job and others don't, that will fall a long way short of what is needed. Today, shortcomings in any branch of business harm all business, and we all know it.

Our task in part is to manage change with forethought and care; to match our hiring to the needs of tomorrow as well as the needs of today; to prevent abrupt dislocations; to anticipate the direction of changes in force composition; to devise the new forms of organization that will be needed; to develop the human skills called for by new kinds of jobs.

But we must go further. We must improve the whole tempo of economic life. This requires more acute discernment of consumer wants. It requires constant and responsive innovation in products and services. It requires intelligent use of profit and all capital funds. It requires diversification of industrial activity in the community, so that people can seek more outlets for their energies and skills.

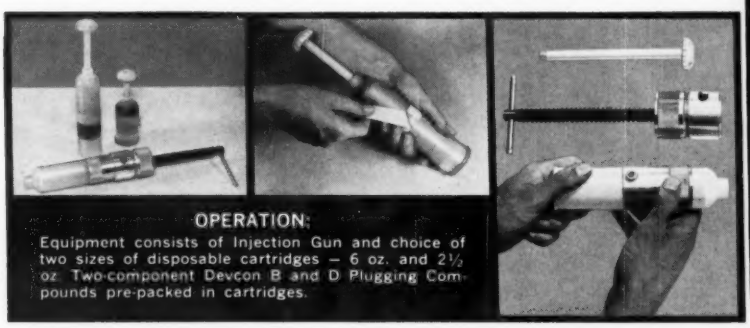
(Continued on page 54)

NEW DISPOSABLE CARTRIDGE METHOD

STOPS CABLE PLUGGING PROBLEMS

Safe • Quick • Easy • No Cleaning
No Skin Contact
Use B and D Compounds

Save time in mixing epoxy resin and activator. Eliminate any cleaning of gun. B COMPOUND is recommended for plastic insulated cable while the D COMPOUND is applicable for paper insulated cable. Both B and D resins are available in 6 and 2½ ounce cartridges. The LD-755 Gun has a lifetime warranty.



OPERATION:
Equipment consists of Injection Gun and choice of two sizes of disposable cartridges — 6 oz. and 2½ oz. Two-component Devcon B and D Plugging Compounds pre-packed in cartridges.

1. Remove tape clinch band from cartridge.
2. Rotate dasher rod until material is completely mixed.
3. Remove dasher rod and insert cartridge in Injection Gun for application.
4. Attach fitting to cable and eject resin.
5. Remove cartridge from gun and discard.

Patent No. 2,838,210 (others pending)

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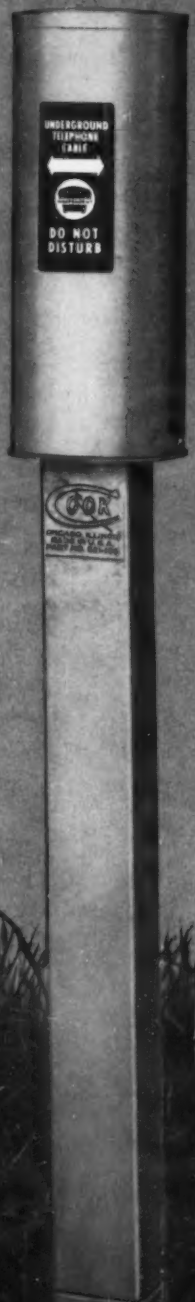
BD PEDESTALS

and accessories



Featuring:

- Faster, easier installations.
- Greater accessibility.
- Captivated bolts.
- Fewer loose parts.
- A full line of accessory equipment.

BD PEDESTALS							
Catalog Number	BD Type	Prot. & Unprot. Term Blk. Cap.		Load Coil Capacity		Maximum Cable To Be Spliced	
		Qty	Size	Qty	Size	Pairs	Gauge
521-100	1	2	1 pr.	2	1 pr.	2 buried wires	
521-119	2	3	6 pr.	2	3 pr.	18	22
521-120	3	6	3 or 6 pr.	6	3 pr.	100	22
521-166	4	10	3 or 6 pr.	10	3 pr.	400	22
521-130	1A	2	1 pr.	2	1 pr.	2 buried wires	
521-110	2A	3	6 pr.	2	3 pr.	18	22
521-136	3A	6	3 or 6 pr.	6	3 pr.	100	22
521-183	4A	10	3 or 6 pr.	10	3 pr.	400	22

BD TERMINAL ACCESSORIES	
Catalog Number	Protected Terminal Blocks, Without Leads
81-280	3 pair, with 41-285 arrester.
81-281	6 pair, with 41-285 arrester.
81-285	3 pair, with 41-610 arrester.
81-286	6 pair, with 41-610 arrester.
81-200	6 pair, unprotected terminal block, without leads.
81-184	6 pair, washer gap protected, without leads.

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OVER-THE-HORIZON ADVANCEMENTS

TWO MAJOR advancements in over-the-horizon communications were recently announced. One announcement was that of a "tropospheric scatter" radio transmitter; the other, development of an experimental "over - the - horizon" communication system, transmitting the same signal simultaneously along seven different paths, separated by fractions of a degree.

The powerful "tropospheric scatter" radio transmitter, a 75,000-watt electronic apparatus, measuring 50-feet in length and capable of transmitting messages, both radio-telephone and radio telegraph, over paths of up to 500 miles with suitable receiving apparatus, was announced by Dynamics Corp. of America.

It was explained that the amplified power of the transmitter is more than seven times that of any existing system, or any ever built for FM tropospheric scatter. The repeater installations may be placed 400 to 500 miles apart, as compared with existing FM tropo scatter systems being located, with average spacing of 150-250 miles; and as compared with conventional microwave at average distances of every 20 or 30 miles.

The new system employs a power amplifier 30 feet long, 6 feet high, and weighing 10 tons; and for cooling, it needs approximately 95 gallons of water per minute. The klystron tube in use is five to 50 times more powerful than other klystrons previously developed for frequencies of 755 to 985 megacycles.

Dynamics Corp. of America explained that the new system will be able to handle over 100 telephone conversations with an ultimate, or theoretical, 240-channel capacity. The super-transmitter was built by Radio Engineering Laboratories, Inc., a communications subsidiary of Dynamics.

The experimental "over-the-horizon" communications system is being developed by International Telephone & Telegraph Corp. to evaluate new concepts in communications radio transmission and reception.

The experimental system will be engineered and constructed as an over-the-horizon radio link connecting Ransomville and Verona, N. Y., a 170-mile hop. The new system will be engineered and constructed under an Air Force Research & Development contract with ITT.

As in other over-the-horizon (O/H) systems, the tropospheric layer of the earth's atmosphere will be used as a reflector of the radio energy to propagate signals downward to large receiving antenna systems. The extraordinary character of the system is such that the signal will be transmitted simultaneously along seven different paths separated by fractions of a degree.

At the transmit end, seven transmitters are to be used to generate the signals, and will "feed" a 28-foot antenna that will propagate the signals toward the troposphere.

At the distant receive terminal, 14 receivers will be used to pick up the signals and couple them to a novel combining system. The resulting combined signal will incorporate the best characteristics of the seven transmitted signals. Each receiver will be equipped with a new hypersensitive device that will minimize static and thermal noises.

Precision data processing facilities will be installed with the system; and it is believed that from this experimental system, improved quality and extended range of O/H communications will be possible, along with a better understanding of the scatter phenomenon.

MICROWAVE INTERFERENCE REDUCTION

IN A PREVIOUS installment (TELEPHONY, May 28, 1960), a discussion was presented on microwave interference from radars.

It was explained that even though radars operated on frequencies outside the common carrier band, there are ways in which they may often interfere—such as by radiation of harmonies. The building of new radar systems by manufacturers to tighter specifications may result in reduction of interference.

A solution to the growing problems of radio-frequency interference from high-power transmitting equipments, such as those used at Heavy-Radar sites, has been developed recently by General Electric's power tube department.

The new development is a filter designed to absorb the unwanted harmonic components of the signal, while permitting the transmission of the fundamental frequency.

In performing the main function of eliminating harmonic power, it serves to boost the power handling capabilities of the waveguide system on the output side. In so doing, waveguide arcing, which results from harmonics, is eliminated.

It was stated that the filter is so constructed and installed that aper-

tures are positioned along the inside walls of the waveguide. Harmonic signals are then "drained off" by a series of coupling slots and muffled in associated secondary waveguide components.

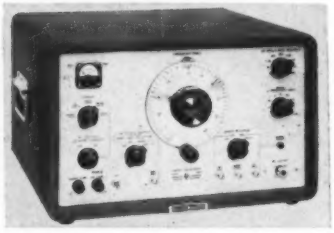
Filters in G-E's present line range in size from one similar to an automobile muffler, to one which is over 14 feet long. Six of the filters, covering the S-, C-, L- and UHF bands, are relatively small and lightweight, while the seventh filter—in the UHF range—is believed to be the largest built to date.

TEST EQUIPMENT

MANY PRESENT-DAY commercial facilities are being provided by suitable multiplexing apparatus coupled into microwave transmitting systems. In the next decade, an even greater proportion of these facilities will be derived by microwave transmission. The medium being used for any signal which is to be transmitted is only as satisfactory as the maintenance that goes into it; assuming, of course, the system was properly engineered and installed, and met design requirements at the time of its production.

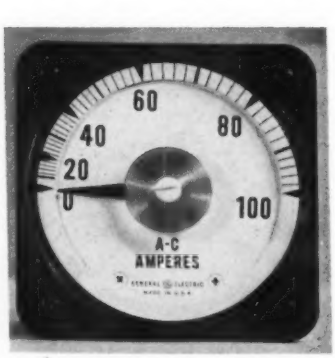
An important part of the maintenance program is the use of proper and adequate test equipment. Of course, sufficient test equipment is costly; but it amounts to only a small portion of the costs of the over-all system, which one is attempting to maintain properly, and *must* maintain in order to insure suitable transmission.

A recent design innovation in test equipment was revealed in the development of a series of four models of sweep oscillators manufactured by Hewlett-Packard. These new sweep



The 682C Sweep Oscillator, designed and manufactured by Hewlett-Packard, covers the frequency band of 1.0 to 2.0 kilomegacycles (kmc). It is one of a new series of sweep oscillators covering a band of frequencies of 1.0 to 12.4 kmc's.

oscillators are designed for use in the 1.0 to 12.4 kilomegacycle (kmc) band, with coverages provided from 1.0 to 2.0 kmc, 2.0 to 4.0 kmc, 4.0 to 8.1 kmc, and from 8.2-12.4 kmc. All models provide for CW or swept rf output throughout their individual bands, and have a range of sweep speeds, so that adequate measurements such as reflection, gain, and loss can be displayed on an oscilloscope or X-Y strip recorder.



General Electric's new line of AB-30 (a-c) and DB-30 (d-c) switchboard instruments. Accuracy is described as being to one per cent, and cost savings, 10 to 20 per cent.

These equipments will make possible microwave investigations and evaluations necessary for the installation and maintenance of such systems.

Metering of power supplies and various other circuit components is a necessity in the telephone communication services, as well as other industry.

General Electric Co. has announced the availability of a complete line of type AB-30 (ac) and DB-30 (dc) switchboard instruments.

The type AB-30 instruments include voltmeters, ammeters, frequency meters, wattmeters, variometers, power factor meters, and synchroscopes. The dc-type switchboard meters include ammeters and voltmeters.

Engineers of the company's instrument department describe the instruments as being accurate to 1 per cent, even in tropical climates.

The company outlined specifications, which include 5.1-inch scale length, although the flange dimension is only 4½ inches square; an element shield, permitting installation in magnetic fields; and a clearly readable dial through a shadow-proof, molded lucite cover, which permits wide-angle reading.

Other features are elements said to be shock-resistant; and spring-loaded jewels housed in dust-proof, moisture-resistant cases.

AUTOMATED ELECTRONICS

THE USE of printed circuit boards, for ease of installation and maintenance and to provide compactness, in the construction of new electronic apparatus has become widely ac-

cepted. New methods continue to be developed and improved for the manufacture of these systems elements.

The electronic industry will soon benefit from the new Leland-Gifford automatic layout machine, which is said to be capable of drilling printed circuit boards, under punched-tape numerical control, at rates up to 48,000 holes per hour.

The new machine has infinitely adjustable feed rates and is capable of drilling at 500 to 14,000 rpm with air-mist lubrication, it was stated.

It was pointed out that the machine may be equipped with up to four ganged, hydraulic feed spindles, mounted on cross rails to drill several stacks of board simultaneously.

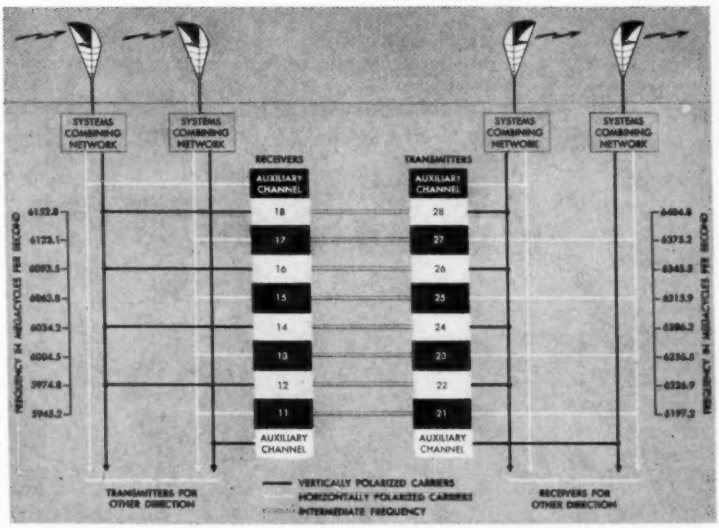
Table positioning is controlled by hydraulic circuits energized by reversible General Electric Thymotrol-controlled motor driven pumps. Positioning accuracy is said to be plus or minus ".001" and repeated accuracies of plus or minus ".005."

The new model PCB will use a modified G-E Mark II numerical positioning control to direct up to four ganged drilling heads simultaneously.

TH RADIO SYSTEM

IN A PREVIOUS article (TELEPHONY, July 30, 1960), a discussion was presented on the development of a "short-haul" microwave system known as the TJ system. Another microwave system, whose design features are of interest is known as the TH system.

It is well known in the telephone industry that many of the cross-country circuits are microwave. The microwave system, over which the communications paths have been provided, is known as the TD-2 system, which operates in the 4 kilomegacycle (kmc) band.



TH Frequency Plan. A signal arriving on 5974.8 mc, channel 12, is converted to the IF and fed out on transmitting channel 22 at 6226.9. (Bell Laboratories Record.)

Each of the TD-2 channels was designed to normally carry up to 600 telephone channels, or one television channel. Today, these channels are becoming overloaded due to increased demands for service. This condition has required the development of a new system. This system must be developed for operation in a common-carrier band where the satisfactory propagation of radio waves may be experienced and sufficient bandwith is provided. The 6-kmc band was selected for this frequency band of operation.

An article by H. E. Curtis, recently published in the Bell Laboratories *Record*, described how Bell Laboratories engineers overcame the fundamental problems in creating a new TH system operating in the 6-kmc band and also described some of the features of the new system in conservation of the frequency band.

The 6-kmc band allocated for use by common carriers actually consists of a band from 5925-mc to 6425-mc, and it is within this spectrum, that the frequencies of operation of the TH system must function.

The TH system divides this allocation into two equal bands with eight radio channels in each direction—each said to be approximately 29.7 mc. wide and each capable of handling 1,860 telephone circuits.

Mr. Curtis, in describing the steps taken by the engineers in reducing interference between closely-spaced radio channels and thus conserving the spectrum, brought out the following points.

". . . vertically polarized channels are placed beside horizontally polar-

ized channels. The two polarizations are separated in the waveguide system connecting the antenna with the radio equipment. The process is so precise, that the interfering signals from adjacent channels are attenuated more than 25 db relative to the wanted signal.

"The mutual coupling, or interaction of signals between receiving and transmitting antennas, is important in determining the number of times assigned frequencies can be re-used. If the antennas are not well shielded, a frequency used between one pair of repeater stations cannot be re-used in the adjacent stations because of cross talk. Thus, each two-way radio channel usually requires four frequency assignments —one for transmitting and one for receiving in both directions."

Mr. Curtis explained that the antennas used with TD and TH systems are well-shielded and, for this reason, a frequency may be used in successive sections. Thus, only two frequencies are required for each two-way channel.

Important in the design of the new system was the fact that the engineers wanted to obtain the same transmission performance in the new TH system as they had with the well-proven TD-2 system. To accomplish this, many important design principles were incorporated; among which was the use of traveling-wave-tubes to increase output power and to improve the noise figure of the converter.

SEMI-CONDUCTOR CONFERENCE

EVALUATIONS OF the organic semi-conductor field will be outlined at a conference at Chicago's Morrison Hotel on April 18 and 19. The latest technical data will be presented in this new technical area which holds great promise for scientific advances in electronics.

Some 19 research papers will be presented covering major topics of molecular crystals, photoconductivity, electrical and thermal transport, and organic semi-conductor devices.

W. O. Baker, Bell Telephone Laboratories, and J. F. Bourland, Central Research Laboratory, American Cyanamid Co., will be principal speakers.

The conference is being co-sponsored by the Armour Research Foundation of Illinois Institute of Technology and McGraw-Hill publications.

Research papers which are thought to be of interest will be obtained by the Electronics editor and discussed in these columns.

ELECTRONICS BOOKS

SEVERAL NEW TEXTS have recently been published and are now available. One of these texts discusses solid-state devices, the theory of which is becoming more than merely desirable in today's electronics era. Knowledge of these new concepts is a "must."

SEMI-CONDUCTORS AND TRANSISTORS, by Alexander Schure. 144 pages; soft cover, price $2.90.

This text is another volume in the electronic technology series. It is a basis for the discussion and evaluation of theories and characteristics of the semi-conductor and transistor. The initial chapter discusses the theory of the atom, the quantum theory, insulators and conductors.

Following the initial chapter, considerable attention is given to the p-n junction diode, and an introduction to the transistor, with a comparison of the basic transistor to the vacuum tube.

Final chapters then discuss the transistor as a circuit component, showing characteristics, drawing the load line, establishing bias, etc. Also, an analysis of the transistor is given by use of a technique of substituting an equivalent electrical circuit in place of the transistor.

AIEE PROCEEDINGS

At the February meeting of the American Institute of Electrical Engineers Wire and Carrier Communication Group, held in Los Angeles, John K. Hilliard, vice president and director of Ling-Altec Research Division, Anaheim, Cal., gave an illustrated talk on improvements in techniques and equipment for telephone applications. The meeting, an all-day session, was held at the Pacific Telephone Auditorium.

Communication engineers from the Bell System, General Telephone Co. of California, California Water & Telephone, from Western Union, and military communication personnel were present.

Discussions outlined the indicated trends in improved telephone transmission, necessitated by the increased demand for service, especially the new Wide Area Telephone Service (WATS) tielines and special customers' equipment.

Mr. Hilliard pointed out the need for a fine-gauge cable, since all presently allocated space in the streets of large cities is now in use. The large-sized conductors are being removed and replaced with a No. 28-gauge, or finer, cable so that an increase in the number of circuits can be provided.

This fine-gauge cable requires more frequent amplification, and he described miniature transistorized amplifiers and 2-wire to 4-wire termination sets of an all plug-in type for this purpose. These units are compact, to such an extent that one floor of a central office can handle the number of circuits now required by four floors of equipment.

Also described were new hybrid coils, of miniature type, which have high transhybrid loss and increased ability to carry large amounts of unbalanced dc.

Mr. Hilliard also commented on the rate of speed with which telephone companies are converting from 2-wire to 4-wire use, which he termed an eventual necessity, as indicated by the use of "dedicated cable," which plans two pairs to each home.

During the meeting, equipment supplied by Altec Lansing's operation on the "Quick Fix" Global Air Force Landline Intersite program was described and illustrated with slides.

CLEANLINESS IN ELECTRONICS

HIGHLIGHTING the recent meeting of the American Society for Testing Materials Committee F-1 on Materials for Electron Tubes and Semi-Conductor Devices, were two well-attended symposia sponsored by F-1's Sub-committee X on Contaminant Control.

One of the symposia thoroughly aired the problems of handling beryllium oxide ceramics which have assumed an important position in the electronics industry due to the fortunate combination of low electrical and high thermal conductivity.

The second symposium heard representatives of the hydrogen peroxide producers discuss purity and control problems with the consumers. Hydrogen peroxide is widely used in the tube and transistor business in processing and surface cleaning.

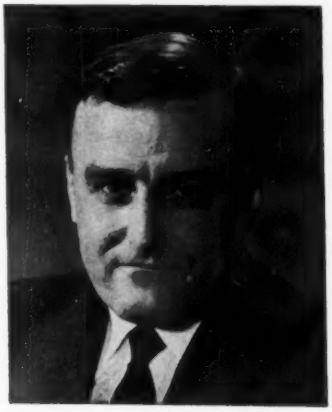
Sub-committee X also has under active consideration, techniques for measuring and controlling air-borne contaminants, the cleanliness of surfaces as well as the control of process liquids. A new task group is considering the problems involved in the control of getters and other gas adsorbers. Under the auspices of Sub-committee X, a Symposium on Materials and Electron Device Processing will be held at the Benjamin Franklin Hotel on Apr. 5 to 7, 1961.

Advertisement

How To Get Your Money's Worth From Electronic Equipment!

THE TELEPHONE industry is rapidly taking advantage of new developments in electronics. This is only natural. Since the telephone first came into existence, telephone men have been quick to recognize the value of new developments.

Thus it is not surprising that the industry is using more and more electronic equipment. Mobile radio is used to connect telephones in cars, trucks and other vehicles. Microwave relay links are used in place of wire and cable in many places. Electronic carrier



Carl E. Smith, E. E., President Cleveland Institute of Electronics

circuits and repeaters result in better utilization of existing (and proposed) facilities.

All of these improvements are available today. Tomorrow will see even greater advances. The manufacturers of telephone equipment can be relied upon to give you the kind of equipment you need to fulfill your obligations to your subscribers.

However, you should keep in mind a fundamental principle of management . . . a chain is only as strong as its weakest link. Thus, no matter how big or small you may be, your equipment will not give maximum performance unless it is maintained by competent technicians.

Every company has a technical staff. It may consist of hundreds or perhaps thousands of men . . . or there may be only two or three. These men know and understand telephone technology as it used to be, but in all honesty, do they understand the fundamentals of electronic circuitry?

If they aren't on speaking terms with oscillators . . . rectifiers . . . amplifiers . . . transistors . . . etc., they are not going to be able to give you the technical support you need. A man may be able to wire a central office switchboard in the dark, but if he isn't skilled in the mental tools of electronics, your new equipment will not give you the service you paid for.

In all probability your present staff is very capable. You wouldn't have one which didn't give you the reliability you must have. Therefore they are the logical men to take on the maintenance of electronic equipment . . . as soon as they have received a sound foundation of electronic fundamentals.

This can be done economically and without the loss of valuable man hours by a non-resident training program. Several schools offer this service. They teach your men the fundamentals of electronic circuits. Then, with the ability to understand the principles of any electronic device, your company and the equipment manufacturer have only to conduct a brief orientation of the specialized equipment.

This plan has been used successfully by many companies. It has helped them . . . and it can help you. It will pay you to investigate and get the facts.

For full information on schools providing training in electronic theory and FCC license preparation, write to the National Home Study Council, 1420 New York Avenue, N. W., Washington 5, D. C.

If you would like the details on our Employers Plan for training technical personnel, write to

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The Plant Man's NOTEBOOK

By RAY BLAIN, Technical Editorial Director

THE WRITER RECENTLY attended the official dedication ceremonies of the National Defense Communications Control Center in Washington, D. C. Rear Admiral William D. Irvin, USN, is the first chief of this new agency.

The center is the initial step in this agency's responsibility to monitor and control the world-wide long-haul, nontactical communications systems of the Army, Navy and Air Force.

The Defense Communications Agency was established by the Department of Defense to exercise operational control and supervision over the Defense Communications System. This system includes all world-wide, long-haul, government-owned and leased, point-to-point circuits, terminals, control facilities and tributaries required to meet specified telecommunications needs of the Department of Defense—for command and control, operations, intelligence, weather, logistics and administration.

This new agency, in the execution of its mission, is charged with specific responsibilities in operations, planning, engineering, programming, and research and development, all related to the Defense Communications System. The operational control and supervision of the system will be accomplished, in part, through a complex of communications control centers.

The functions and tasks associated with the control centers are to tabulate, assemble, store and display information on current conditions of the components of the Defense Communications System; to allocate channels and circuits to meet approved requirements of authorized users; and to perform continuous system analysis and such other tasks as are necessary. The principal objective of the control center system is to assure the greatest possible responsiveness of the Defense Communications System to the needs of its users.

The heart of the communications control center complex is the National Defense Communications Control Center, co-located with headquarters, Defense Communications Agency, in Arlington, Va. Here, in this automatic processing center, complete information on the communications traffic and system status throughout the world is processed and acted upon.

The Defense Communications Agency selected the Philco Corp. as the prime contractor to set up the National Defense Communications Control Center. Philco then selected the Systems Development Corp. as an associate. Working closely with Philco, Systems Development Corp. prepared an operational system description and performed operative analysis of the system. In addition, it furnished computer programming for the Philco 2000 electronic data processing system around which the complex is built. This company also participated in the training of personnel.

Complete information on communications traffic and system status throughout the world is fed into this control center, where it is processed and acted upon. To provide instantaneous status information for decision-making personnel, a unique display system was developed. This system, of modular design, can be easily expanded to meet future growth and use of the system, or to meet future developments in this field.

The display system complex occupies an area of more than 400 square feet. One display panel, 8 feet high and 15 feet long, is an edge-lit map of the entire world. This panel indicates the changing status of the major trunks and stations of the system. The displays also include 8 by 8-foot traffic status readout, and three command network panels.

The display panels are arranged around the main control room and are visible from either of two main control consoles. There are more than 17,000 illumination sources in the displays, with a life-span of more than seven years. The solid state, high-speed switching display complex requires approximately 4,000 transistors, more than one million soldered connections, and more than 50 miles of wire.

Information presented on the display panels covers the full range of data required to analyze intelligently this world-wide communications system. Included in this information are trunk status, assignment and availability of individual circuits, station status, and scope, priority and quantity of message backlog. For clarity, a minimum of letter and number displays was used.

The system supervisors must quickly grasp great amounts of changing system detail. Therefore, multi-color presentations, unique shapes and positions were used in the display panels to present the data. The design of the display system was also based on human engineering studies so that system supervisors could better evaluate the information presented to them for the decisions they must make.

Adjacent to the display panel area, a Philco 2000 electronic data processing system is located. This system is the electronic brain of the control center. The computer is connected into an input system through a computer access device which receives all messages from inputs from relay switching centers through the Defense Communications System. From the access device, signals are routed directly to the computer. In the meantime, the access device is also receiving inquiries from the control consoles about the status of any point in the communication system. These queries are then forwarded to the computer, which automatically answers them, and replies through the access device to the appropriate display panels.

Even without direct inquiry, the computer, through the computer access device, automatically updates all displays

rugged, reliable and tough as nails!

ACHIEVERFONE

AChieverfone by AC has been designed to give unfailing reliability despite extreme temperatures, vibration or amount of usage.

For example, the transmitter drivers and final are in a box cooled by a finned heat sink. This allows the transmitter to operate at about 18°C cooler than competitive models, thus extending operating life.

AChieverfone's design also includes special perforations in the R-T unit to permit convection cooling of the power supply in addition to radiation cooling. New, 7000-series tubes have been used wherever possible to guarantee the user longer tube life and a minimum of service problems even over rough terrain.

Reliability is just one outstanding feature of AChieverfone. Lowest initial cost and fast, easy installation are other reasons why you should consider this mobile radiotelephone above all others. For more information, write or call AC today.

SPECIFICATIONS—FCC Type Accepted

Transmitter: 144-174 Mc, 4-Channel
RF output: 22.5 watts into 52 ohm load

Receiver: 144-174 Mc, 4-Channel
Wide Band (60kc) or Narrow Band (30kc) models available (Bands quickly converted to Narrow or Wide by substituting IF filter)

Frequency Stability: within 0.0005%

Selective Signaling: 51,000 five-digit (compatible, 2-tone, sequential) codes available

Size: Receiver-Transmitter, 21⅛" x 8⅜" x 6¼"

Weight: 37.25 pounds, including receiver-transmitter, control head and interconnecting cable

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to show actual status of the system. Automatic alarms which demand immediate attention and decision by the system supervisors are installed. The entire operating complex establishes the computer as a means of handling difficult and integrated tasks automatically.

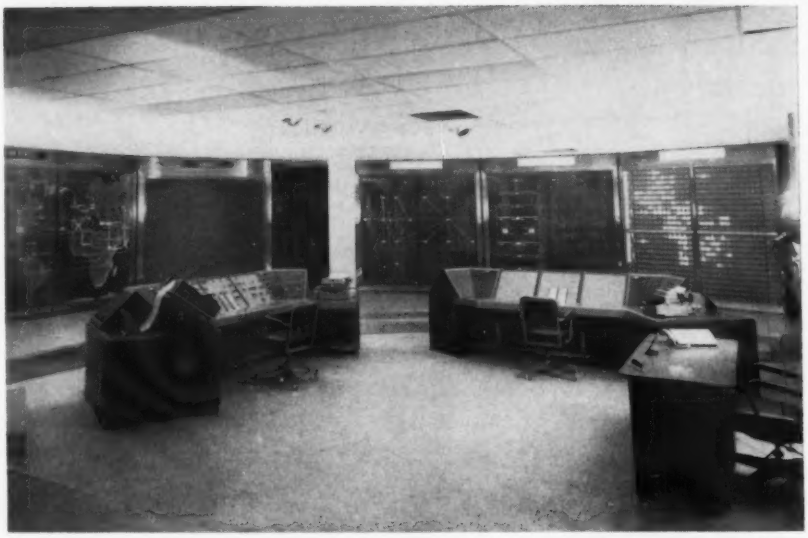
The modular design of the 2000 system also permits it to be expanded as requirements change. The present 32,000 48-bit word-core storage unit, for example, has an access time of 10 microseconds. However, a completely compatible memory unit of the same capacity, but with a two-microsecond access time, can be installed at any time required. When the messages are received, they are first stored in the core memory. Later, they are transferred to magnetic tape.

Associated with the central computer is an input/output processor to which up to 16 magnetic tape units, or universal buffer controllers, can be connected. Each magnetic tape unit or buffer controller can transfer information to or from the computer at the rate of 90,000 characters per second through two simultaneous channels. In addition, each buffer controller can be connected to two other tape units, a high-speed printer with a 900 line-a-minute printing speed, and a punched-card system. Each buffer controller can operate either on-line or off-line. During the off-line operation, data may be transferred between any two peripheral devices connected to the buffer controller, without interrupting the central computer.

The fully automatic operation of the computer is controlled by an executive routine which directs a variety of processing routines. The executive routine is always sensitive to the instantaneous demands of the system. It must choose, according to the demand priorities, which of the stored programs the computer should, at the moment, be operating on.

As the demand shifts, the executive routine can interrupt at any time for a higher-priority task. The computer will store its current position in the lower-priority work and then turn immediately to the new task. Later, it will return to the first task when the executive routine indicates. Of lowest priority are the diagnostic routines which will check out the system's operations whenever no higher order of work is required.

Timely implementation of the new Defense communications control complex was extremely important because of the present world conditions. Therefore, the Defense Communications Agency divided the control complex program into a number of phases, first phase of which is now operational.



Over-all view of the Defense National Communications Control Center, the "heart" of the Defense Communication Control complex under the direction of the Defense Communications Agency. On the left are the console and status panels (a third panel, traffic status, to the left of the system status panel, is not shown). To the right are the network panels and control center. Adjacent to the control room area is a Philco 2000 electronic data processing system, which is the electronic brain that drives the status and network boards, and which provides information and answers to queries on communications status throughout the world to system supervisors who operate the consoles.

Later phases of the program will be directed toward decentralizing the system control into logical areas throughout the world; enlarging the data base for more timely and pertinent information; and enlarging the system's capability so that many allied problems entailed in managing a large communications system may be solved. Another phase will deal with real-time control so that the distribution of all available communications facilities will efficiently and economically meet actual traffic demands under all foreseeable conditions.

•

Our nation's capital continues to lead all other cities in telephone density, having 83 telephones for each 100 population. It has also been disclosed that in 1959 the number of telephones in the world increased to 133.6 million, a gain of almost 9 million over the previous year. The U. S., with 70.8 million at the end of 1959, had more telephones than the rest of the world combined. Today, there are over 74 million.

The average American uses his telephone 496 times a year, and he can reach more than 130 million telephones around the globe. The "talkingest" people in the world are the Canadians, who averaged more than 530 conversations per person in 1959.

While the U. S. led all countries in telephone development, with 39.5 telephones for every 100 persons; Brazil, with 1.48 telephones per 100, reported the smallest number per capita of the major countries. Russia ranked second from last with 1.9 telephones for each 100 population.

•

Plastic guy guards are now available in colors of yellow, white and red. They are designed to fit any guy size from ¼ inch to ½ inch. They are non-conductive, weather and temperature-resistant, will not burn, rust or dent, and have high impact strength at –20 degrees F.

These guards are 72 inches in length and are permanently attached to the guy strand with non-corrosive clamps. The guard snaps in place and is attached by the use of a screw driver.

Cross Talk

It is claimed that the length of time a woman can keep a secret may be measured by the distance to the nearest telephone.

•

Even though money doesn't make you happy, it does quiet the nerves.

•

It is reported that industrial firms employ more PhD.'s today than all liberal arts colleges in the country combined. The organization that employs the most is DuPont.

With GMPCo *it's easy as B, C, D,*

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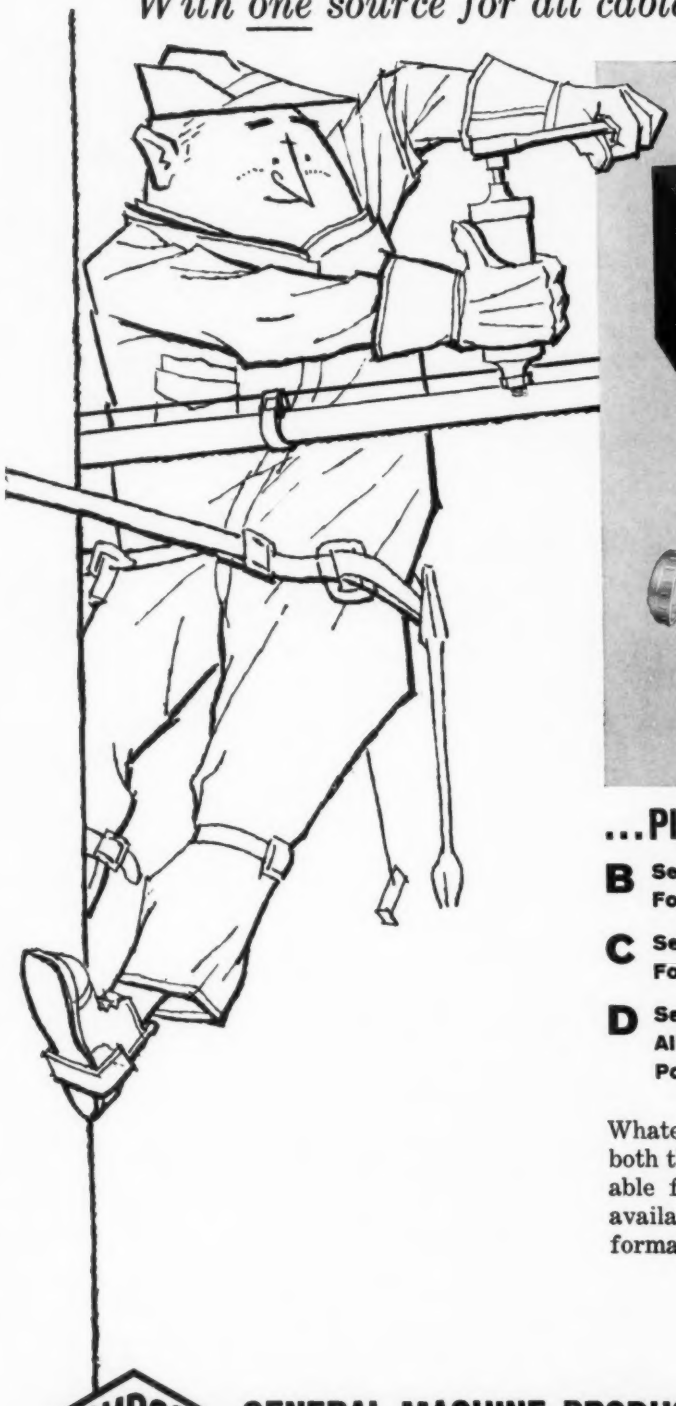

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Classroom Interviews in Cal., Mo. Utilize Telephone as Aid

STUDENTS IN AT LEAST two widely separated spots in the U.S. are using the telephone interview to learn about their government, and about the country's leaders in government, the arts and industry.

At Carpinteria High School in Los Angeles County, Cal., 80 seniors are learning about government and economics through the use of their new communications plan in the classroom. Despite the fact that Carpinteria is a small school with an enrollment of just 375 students, a parade of the great has come to it recently via this unique communications system.

Among those who have been interviewed and thus, have collaborated in making the program available to the students are: Sen. Hiram Fong of Hawaii; President Kennedy's brother and campaign aide, Ted Kennedy; Congressman Charles Teague; Dr. C. C. Trillingham, Los Angeles County superintendent of schools; the county supervisor; and the district attorney, all of whom have spoken to the government classes.

The special communications system making this possible consists of a linked hands-free telephone with an amplifier and a tape recorder, a plan developed jointly by the classes' instructor and the General Telephone Co. of California, Santa Monica.

Students in the government classes contact, via the telephone, local "big names," including political figures who are passing through the county, and arrange for the telephone interviews. Both students and instructor then do the interviewing of these leaders, whose voices are amplified to the class during the questioning.

At the time of the interview, the students of one government class tape-record it, and play it back to the other two government classes. Recording sessions are shared among the three classes so that most of the students get an opportunity to interview one of the dignitaries. Also, a communications log is kept by the students on each speaker, giving his topic, the length of the discussion, the date, time, and the student's comments.

During last November's national election campaign, the high school students heard as speakers Senator Fong and Congressman Teague on the GOP side of the issues, and Democrats Averill Harriman and Ted Kennedy. Both party speakers made nonpartisan as well as partisan comments. Information gleaned from these visits over the telephone was related to a current student topic, and later incorporated in government class tests.

It has been pointed out that one technical advantage of this system of interviews is that after the interview, the recorder can be stopped, in the middle of a sentence, if necessary, for a question period, or to supplement or re-emphasize a point by repeating it.

According to General Telephone officials, this is the only known case of an American high school using such equipment for classroom purposes, and it may establish an educational first.

There is, however, still another educational experience derived from the use of Carpinteria High's communication system, in that the students are not only getting a personalized view of their government and of politics, but they are learning about economics in the most practical way.

In order to pay for the equipment purchased to set up the communications system, students are working on various projects. Installation and total annual monthly charges equaled $300; the tape recorder cost $160; tapes, $140; and in addition, there have been the costs of long distance calls to leaders interviewed, plus some miscellaneous expenses. Money-raising activities on the students' part have included an election night party; a car-wash series; athletic games concessions; a two-county teenage fair; neighborhood light bulb sales; and other projects.

Additional benefits growing out of this telephone interview project are: financing methods, advertising plans, budget-making, accounting, group planning, parliamentary procedures, and public relations.

Endorsing the use of the interviews as an aid to education are the local school board, and H. D. Baylor, Carpinteria's principal, who suggests that General of California "may have a sleeper" in this cooperative project in education.

In mid-Missouri, at Columbia's Stephens College (enrollment, 1500), the coeds are also conducting interviews with "greats" and doing it over the telephone. A $1,200 telephone bill, paid to the General Telephone Co. of Missouri, was run up by the students. The tele-

(Continued on page 57)

Classroom scene at Los Angeles County, Cal. Carpinteria High School as "stage is set" for an interview, via hands-free telephone and tape recorder, with former Gov. Averill Harriman, now President Kennedy's Special Ambassador. Communications system was developed by government class instructor in cooperation with General Telephone Co. of California. Here, waiting for a call from the ambassador, are (from left to right): George Vernor, Santa Barbara district manager for the General company; and ready to fire interview questions, John Blackman, Art Chavez, and Janet Slocum, students.

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From small unattended exchanges to large multi-office networks, Strowger's faithful performance is proven year after year. Shown here are just a few of the many independent exchanges served by Strowger Automatic.

Whether you serve a village or a city, Strowger is your best bet for the future. The simple design of this dial equipment keeps adjustments and repairs to a minimum. Strowger is easy to finance. And if your area is growing, it's simple to expand the capacity of Strowger equipment.

Are you planning a dial conversion? If so, get in touch with us. We've helped hundreds of telephone companies—*of all sizes*—to solve their dial conversion problems. We'd like to do the same for you. Just write Automatic Electric Sales Corporation, Northlake, Illinois.

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Beatrice, Nebraska
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Mankato, Minnesota
Irving, Texas
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Johnson City, Tennessee
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GENERAL TELEPHONE SYSTEM

Courts and Commissions

Rule Subscribers Can Pick Own Exchange in Neb. Case

The Nebraska Railway Commission on Mar. 8 gave its permission for telephone users in the vicinity of Eddyville, Cozad, Oconto and Lexington to obtain service from "any operating company of their choice operating within the area." Service is now furnished in this area by the Eddyville Telephone Exchange, Cozad Telephone Co., Public Telephone Co., Oconto, and the Lexington exchange of the Northwestern Bell Telephone Co.

This order also revoked the commission's order of Nov. 23, 1960 which denied permission of subscribers in this area to transfer service to the Lexington exchange. All subscribers involved in the application now receive switching service from the exchanges at Eddyville, Cozad and Oconto.

The order of the commission stated in part:

"The tariffs of the regulated telephone companies provide for construction of a maximum distance . . . not to exceed one-half mile per subscriber; the remainder of the cost of construction would have to be borne by the subscriber. If all parties applicant subscribe to the service, the cash outlay would approximate $156. If a lesser number than the total number of applicants subscribe to the service, the cost would be proportionately greater on a sliding scale. The rural subscribers would be required to furnish all labor incident to construction. The construction would have to be in conformity with engineering requirements of the operating companies, and when the construction was finally completed, and the property in place, title to the property (would) vest in the operating company and the maintenance of the line (would) be the responsibility of the operating company. The operating companies do not now have a rate applicable to this type of subscriber at the Oconto and Cozad exchanges.

"The evidence further discloses that a majority of the applicants will not subscribe to service at the Oconto exchange. Neither will they invest time, labor or money in an attempt to get service from this exchange.

"The commission is of the opinion and further finds that the provisions of Sec. 86-213 R.R.S. Nebr., 1943, as amended, are not applicable to the factual situation obtaining herein since the operating companies are not now (furnishing), nor have they at any time within the past five to 25 years, furnished any service to the residents of the area involved herein over their own facilities.

"The commission is of the further opinion, and finds that it is in the public interest that all who desire telephone service, and can afford it, should have it, and since the parties applicant here are not presently receiving service over company-owned facilities from any of the operating companies, other than specific services, the commission is of the opinion and finds that the applicants should be permitted to obtain service from the operating company of their choice."

NW Bell Receives OK to Set Neb. Dataphone, Telpak Costs

The Nebraska Railway Commission on Mar. 8, approved applications of the Northwestern Bell Telephone Co., as follows:

The company was given permission to modify and expand its offering for the connection of customer-provided data transmitting and receiving equipment, and to eliminate a temporary service offering and make it permanent (TELEPHONY, Oct. 1, 1960). Additional Dataphone sets are to be provided, as well as the connection of teletypewriter equipment. The following rates and charges were approved:

Dataphone Terminal Equipment	*Installation Charge*	*Monthly Charge*
Dataphone 100		
Suitable for conditioning signals at rates up to 75 bits per second in sequence.		
Sending or Receiving	$25.00	$15.00
Arrangement for remote motor control includes visual busy indication and restoral of line to normal condition, per station	None	$ 5.00
Combined sending and receiving	$25.00	$22.50
Dataphone 200		
Suitable for conditioning signals at rates up to 1,200 bits per second in sequence.		
Combined sending and receiving	$50.00	$40.00
Dataphone 600		
For use with customer teletypewriter equipment.		
Combined sending and receiving	$10.00	$ 8.00

Move Charges

When Dataphone terminal equipment is moved to different premises, installation charges apply.

When Dataphone terminal equipment is moved on the same premises, one-half of the installation charge applies.

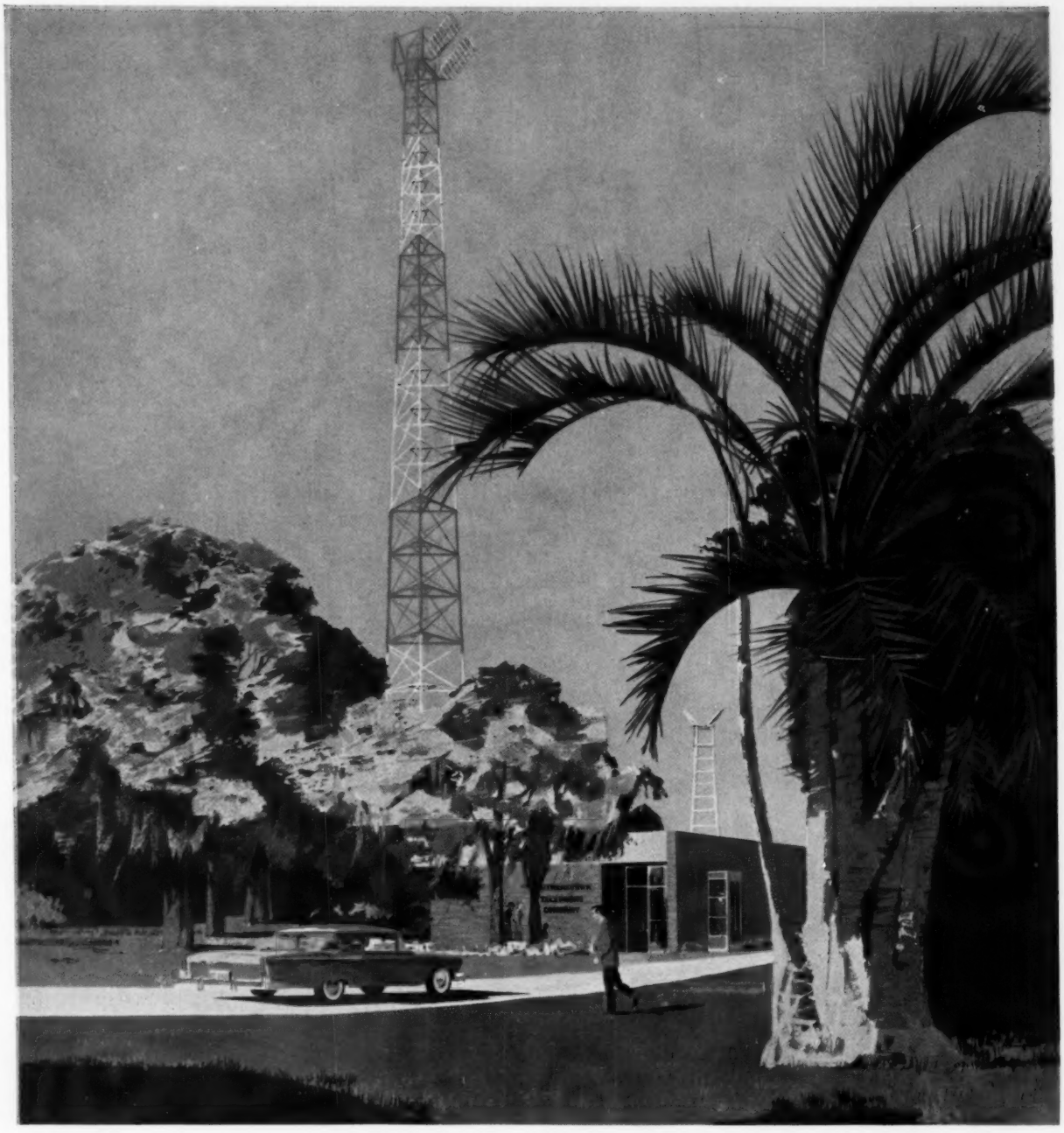
Also approved was a rate of $8.00 per month and an installation charge of $10.00 to apply for each Dataphone 600, where required, in conjunction with alternate use of private line telephone service channels for teletypewriting purposes.

The furnishing of illuminated dial telephones, either with or without the night light, is now subject to the availability of these items in stock. The company stated that the illuminated dials are now a part of the Princess telephone, and that there has been little or no demand for the older type telephone with illuminated dial, the manufacture of which has now been discontinued.

A flat monthly rate of $5.00 applies for each mobile pocket radio receiver (Bell Boy Receivers), to which any number of signalling calls may now be made without additional charge. This supersedes the tariff which provided for a $5.00 monthly charge to include 80 signalling service message units. Two message unit charges also applied for each signalling call made to the customer from the principal exchange; each additional unit furnished to the same subscriber would cost $2.00, including 20 signalling service message units.

The company may now offer a new service at new rates for automatic transmitters, perforators and re-perforators for use with a new type of teletypewriter. It also makes a new offering for 100-speed private line teletypewriter service. The commission approved a tariff for alternate use of private line teletypewriter service channels as channels for remote metering, supervisory control and miscellaneous signalling purposes.

Also approved was a tariff to provide Telpak channels and services. This new service provides communication paths of various widths which are capable, to different degrees, of transmitting all



***SOUTHEASTERN TELEPHONE COMPANY** expands with Collins L1-compatible carrier for direct toll system interconnection.*

Growing toll traffic from Florida's capital city area has led Southeastern Telephone Company to expand to 180 channels on its main toll outlet, a 26.4 mile Collins Microwave System between Tallahassee and Monticello, Fla. At Monticello, three super groups are fed directly at baseband frequencies into the Southern Bell TD-2 system. Direct compatibility of Collins Carrier with Western Electric L Carrier — both L1 and L3 allocations — eliminates back-to-back voice frequency equipment at the interconnect point. Southeastern is also enlarging its plant in West Florida with a new four station Collins Microwave and Carrier System providing special service voice and data circuits for Eglin Air Force Base. For consultation and assistance on your expansion program, contact Collins Radio Company, Texas Division Sales, 1930 Hi-Line Dr., Dallas 7, Texas.

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forms of electrical communication required by modern business. These include telephone, teletypewriter, control, signalling, and data services. Three sizes, 12, 24, and 60-voice-circuit capacity, are available, and the customer may select the Telpak channel best suited to his needs. Telpak service is furnished on a full-time basis, 24 hours a day, seven days a week. Monthly charges are based on the width of the Telpak channel and on the type and number of circuit terminations provided.

The company was given permission to withdraw its tariff, which provides: "If a 4-conductor jack is rewired to terminate two 2-wire circuits instead of a single circuit, a $10.00 installation charge again will apply." The order stated that while a minor revenue loss would result, this would be offset largely by savings in administrative expense.

Hearing on General of Ind.-Illinois Bell EAS Proposal

The Indiana Public Service Commission has announced that a public hearing will be held on Apr. 4 in connection with recently announced plans made public by both General Telephone Co. of Indiana and Illinois Bell Telephone Co. to offer extended area service (EAS) between General's new exchange of Portage, Ind., and the Illinois Bell exchange at Gary, Ind. This would be in addition to extended area service from Portage to Hobart, East Gary, and Ogden Dunes, already approved.

In the proposal, the General company has acknowledged that extended area service would be most desirable in meeting service requirements of the majority of subscribers in that rapidly developing area of the state. Details of operation have been coordinated between General and Illinois Bell and the plan must now receive approval of the Commission.

General Telephone of Indiana has announced its plans for the construction of a new exchange in Portage. The inauguration of extended area service between subscribers in the Portage and Gary exchanges would become a reality upon activation of the new Portage exchange facilities.

Pass Party Line Law in Neb.

A bill making it a crime to refuse to surrender a telephone party line in an emergency has been passed by the Nebraska legislature and sent to the governor for signature (TELEPHONY, Jan. 28). It also makes it unlawful for anyone to claim falsely that an emergency exists in order to obtain use of a party line. The penalty for either offense is a fine of from $25 to $100.

Independent Telephone Corp. Common Stock Offering Filed

A public offering of 350,000 shares of the common stock of Independent Telephone Corp., Dryden, N. Y., will be made in the near future by an underwriting group managed by Burnham and Co., according to a preliminary prospectus filed with the Securities & Exchange Commission (SEC) on Mar. 8.

Independent Telephone Corporation currently owns 12 telephone operating companies. Six of these are in New York, three in Michigan, one in New Jersey and New York, one in West Virginia, and one in Florida. ITC also has options to acquire controlling interests in four other operating companies in New York State.

In addition, ITC renders accounting, financial, management and other services to its subsidiaries.

Net proceeds from the sale of the shares will be used to repay presently outstanding bank loans, to make additional investments in the common stocks of subsidiaries, and for general corporate purposes.

Introduce Toll Call Fraud Bill in Rhode Island

A bill outlawing various practices for making "free" toll calls has been introduced in the Rhode Island legislature.

The measure provides that anyone obtaining, or trying to obtain telephone service, with intent to defraud the telephone company of all or part of its rightful charges, shall be fined up to $500, or jailed up to 30 days, or both.

The proposal outlaws "obtaining any communications service by any false representation, false statement or stratagem, by the unauthorized charging to the account of another, by installing or tampering with any facilities or equipment, or by any other means."

OK Stock Sale in N. C.

The Central Telephone Co., Hickory, N. C., was authorized on Mar. 14 by the North Carolina Utilities Commission to sell 25,000 shares of its common stock to its parent company, Central Electric & Gas Co. of Lincoln, Neb., for $24.50 per share.

Deny Rate Injunction in Tex.

The Fourth Court of Civil Appeals at San Antonio, Tex. has denied a petition by the General Telephone Co. of the Southwest that the company be allowed to put increased rates into effect in the city of Weslaco while a rate proceeding is being appealed by the city (TELEPHONY, Mar. 18).

2 Sales Requests, a Merger, Rate, Stock Requests in Mo.

Actions by the Missouri Public Service Commission taken recently include the following:

The commission received on Mar. 6 the application of the Webster County Telephone Co., Marshfield, for a revised schedule of rates for its Marshfield exchange.

•

On Mar. 8, the joint application of the Summersville Telephone Co., filed by J. W. Spake, to sell and of the Modern Telephone Co., Springfield, to purchase the former's properties in and near Summersville was filed, and a hearing set for Mar. 21.

•

The commission has set Apr. 12 as the date of a hearing on the application of the Sheldon Telephone Co. for a certificate of convenience and necessity to operate a telephone exchange at Walker, to acquire the physical plant, and to issue 1,148 shares of its $10-par-value common stock.

•

The application of the Iowa-Illinois Telephone Co., New London, Ia., a Delaware corporation, for approval of the merger of the Soap Creek Telephone Co., an Iowa corporation, with Iowa-Illinois, and for Iowa-Illinois' qualification to transact business in Missouri, was also filed before the Missouri commission.

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Scheduled for a hearing on Apr. 14 was the application of the Stover Telephone Exchange for a certificate to render telephone service in an area including the town of Florence.

Ind. Commission OK's Rates, Ends 4-Year Litigation

The Indiana Public Service Commission, it was reported on Mar. 20, approved rates already being charged by the Indiana Telephone Corp., Seymour (TELEPHONY, Feb. 8 and 22, 1958). This approval came in a case that has been in litigation for more than four years.

Indiana Telephone Corp., which serves 40 communities in southern Indiana, was granted an average 60 per cent increase in its rates in 1957. In 1958, the commission rescinded that increase, but the company was allowed to charge the higher rates while appealing its case in the courts.

In December, 1960, the Indiana Appellate Court upheld the rate increase

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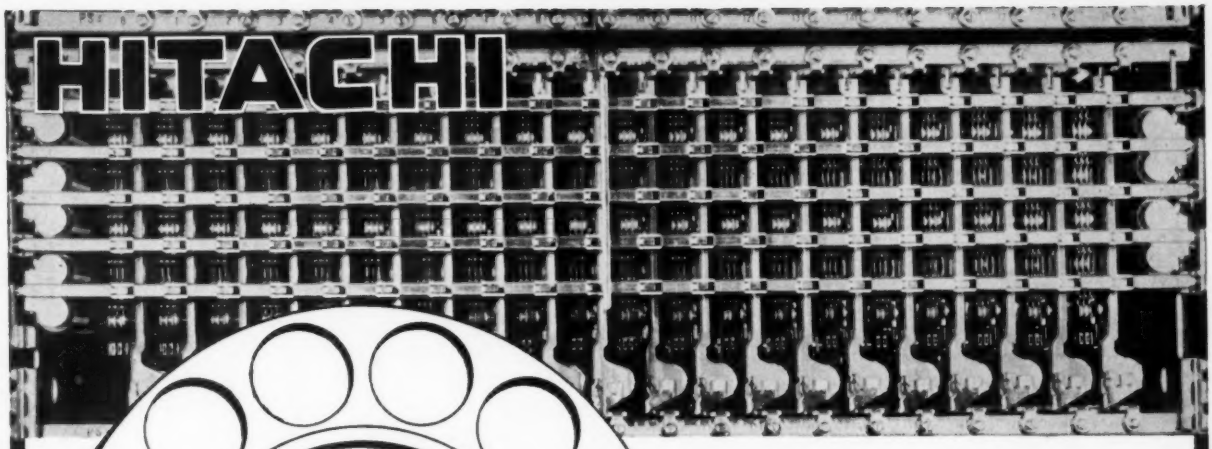

For communication systems, call Hitachi

Extensive Hitachi experience with communications systems is reflected in the handsome Type HA-6 telephone set. Its light, compact and sturdy body is tough enough to withstand the shock of being accidentally dropped to the floor. Other outstanding features include high-fidelity transmission and reception, dust-proofed ratchet for ever-smooth dialling action, and clear and commanding bell-tone.

Today's telephone communications authorities are now employing the Crossbar System Automatic Telephone Switchboards in addition to the time-proven "step-by-step" Strowger System. They are finding that the Crossbar System offers many advanced facilities, fewer maintenance problems, minimized failures and longer service life, and that these features are making it ideal for unattended operations. Hitachi has devoted particular attention to the development of the Crossbar System, and consignees continue to report gratifying operating results.

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- Radio and Television Broadcasting Equipment
- Parts for Communication Equipment
- Analog and Digital Computers

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and returned the case to the commission for further hearing (TELEPHONY, Dec. 24). The commission's order had the effect of following the court's ruling.

The commission's approval will permit Indiana Telephone Corp. to complete a six-year improvement program which will cost about 6 million dollars; and includes conversion to dial service. The commission has also authorized cut-over at the Madison, Salem, Paoli, Henryville, and Worthington exchanges.

Rate Basis Bill Killed in Kansas State Legislature

A bill to make original cost of equipment less depreciation the basis for determining Kansas utility rates has been killed by the lower branch of the state legislature, it was reported on Mar. 20 (TELEPHONY, Feb. 25).

The Kansas controversy has been focused on a case involving the Kansas Corporation Commission and the Southwestern Bell Telephone Co. The Shawnee County District Court earlier held that the commission should have considered the fair value of the telephone company's property.

Both the Kansas commission and Southwestern Bell have appealed the lower court's ruling to the Kansas Supreme Court.

Authorize Sale of Two Companies in Minnesota

The Minnesota Railroad and Warehouse Commission on Mar. 13 approved the sale of two companies to the Woodstock Telephone Co., Ruthton.

The Woodstock company was given permission to purchase the Deuth Telephone Co., Holland, and the Russell Telephone Co.

The Deuth company serves 55 stations; the Russell company 150 stations.

Illinois Company Requests Purchase, Note Approvals

The Palestine Telephone Co. has filed an application with the Illinois Commerce Commission asking for authority to purchase the Porterville Telephone Co., Peoria. The Porterville company operates exchanges at Annapolis and Eaton.

The Palestine company also asked for approval of the issuance of $303,000 in promissory notes.

Asks Note OK in Illinois

The Illinois Commerce Commission on Mar. 20 was to have heard the application of the Inland Telephone Co., Champaign, for authority to issue $222,000 of its first mortgage notes.

Ask Oklahoma Court for Dissolution Approval

A petition has been filed in Medford District Court by officers of the Lamont (Okla.) Rural Telephone Co., seeking approval for the dissolution of the company and the distribution of its assets.

The Lamont company's exchange has been sold to the Pioneer Telephone Co., Kingfisher.

The court has been requested to permit the company to convert all of its holdings into cash and to distribute the money to those "entitled by law to share it."

Filing the petition were Frank Skaggs, Elmer Black, T. R. Cole, Bryan Dowell, George Mueggs and Roy Niehaus.

Put Telephone in Every Dorm Room at Tex. College

It's tougher to get into college these days for everybody except the telephone company. University officials today are growing more receptive to suggestions about modern dial service for their students.

Part of this awareness is due to the work of pioneering Independents who have proven that student dial service can be successful — witness the Gulf States Telephone Co.'s installation at East Texas State College, Commerce.

The Gulf States installation at the college is completing its second semester of operation. All indications are that the Stromberg-Carlson dial PBX is scoring an academic as well as a social success—especially with the students.

The East Texas State student body has found that a telephone in each dormitory room conserves valuable study time. And the campus telephone directory, listing all numbers, has replaced the "little black book" as the dating manual. The cost of telephone service is included in regular college fees, and the students consider this a small enough price for the wonderful convenience of two-party, room telephones.

All telephones on the campus may be used to originate calls at any time of the day or night. However, calls cannot be completed to dormitory telephones between the hours of 11 p.m. and 6:30 a.m. The ringing power is turned off on these telephones during that time. In case of emergency, a call can be completed to the station of the faculty member in residence.

In the office and administrative departments, too, the dial PBX is eating away at the cost of paper work necessary in running a college or university.

To keep administrative officials in closer contact, a code call device has been incorporated into the system. When an official receives an important call and is not in his office, a code number is dialed and an audible signalling system is operated to alert him to the call.

Niki Smith, associate editor of the yearbook at East Texas State College, finds deadlines easier to meet with the help of the new dial system installed by Gulf States Telephone Co.

The step-saving dial system is a "cooperative brain-child" of the Gulf States company and the college. Officials from both groups worked together in planning the system and putting the plan into action.

East Texas State College was established as a private school in 1889 and later became state supported. It offers students a choice of 36 major fields and 11 pre-professional areas.

Thirty-five buildings make up the main campus. A new 1.2 million dollar library was recently constructed. This will be put to good use as the enrollment at the 100-acre campus increased by 12 per cent this year, according to the college president, James G. Gee.

Gulf States company, Tyler, Tex., serves more than 25,000 subscribers. General Manager Rolla L. Johnson has spearheaded the company's drive to bring dial service to all of them. Ninety per cent are now receiving dial service.

Approve N. Y. Stock Issue

The New York Public Service Commission has authorized Rochester Telephone Corp. to issue 273,437 shares of common stock with a par value of $10 per share. The price is to be fixed on the basis of market conditions prevailing on or about Mar. 24.

Why is the Sierra Frequency Selective Voltmeter the standard of the communications industry?

Performance-proved by thousands of users! • Accepted by all major carrier systems manufacturers, specified by most! • Uniquely convenient, versatile, dependable for monitoring carrier modulation level!

- Single frequency band, one continuous tuning range—eliminates band switching
- Flat voltmeter section—for accurate measurement, easy detection of spurious signals
- Wide bandwidth—1 to 620 kc—covers 120 channels per L carrier allocation
- Coarse, fine tuning on a single knob—for greater convenience
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- Domestically produced—for years-ahead engineering, rugged construction
- Dual selectivity—versatility for communications test, wave analysis, general lab use

SPECIFICATIONS
MODEL 125A

Frequency Range
Tunable Mode: 3 kc to 620 kc
Flat Mode: 1 kc to 620 kc

Measurement Range
Tunable Mode: —90 dbm to +32 dbm
Flat Mode: —30 dbm to +32 dbm

Selectivity
Narrow: Down 3 db 125 cps off resonance; down 45 db 500 cps off resonance
Wide: Down 3 db 1.25 kc off resonance; down 45 db 5 kc off resonance

Price $895.00, f.o.b. factory

Call your Sierra representative or write direct. Sierra Model 125B-CR, with upper and lower sideband carrier re-insertion, and Model 125B-Y, with patchcord connections for type "O" and type "N" Western Electric carrier, also available at additional cost.

Data subject to change without notice.

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7127

THE Operator's Corner

By MAYME WORKMAN — TRAFFIC EDITOR

EVER NOTICE how some people can enter a room full of strangers and, a few hours later, leave a room full of friends?

Invariably, they're the same men and women who seem to get tapped for promotions just a little faster, and a bit more often, than their fellow workers . . . the ones who are earmarked for leadership . . . who get invited places . . . who get a "bang" out of life.

Envy them? Don't. Instead, *join em!* It's not hard. *You* can do it—if you master the gentle art of getting along with people. There are just six rules.

(1) Whenever possible, call a person by name. The most truly personal possession anyone has is his name. He always likes to hear it, especially from strangers, for it really means, "I recognize you and am interested in you."

Winston Churchill discovered this early in life, and credited many of his diplomatic successes to his habit of learning, in advance, the name—including its correct pronunciation—of every man he ever met. (In handling telephone calls, we are encouraged to use the customer's name, when we know it.)

Next time you're introduced to someone, make sure you get his name right. Use it. It works wonders.

(2) Pay at least one true compliment. There is at least one thing genuinely praise-worthy about somebody. The meanest person in the world may grow prize-winning roses . . . or know more about American history than anyone else in town . . . or speak several languages . . . or be a painstaking craftsman. A person will soften a little —maybe even a lot—if you recognize and compliment her on her achievement.

Make sure your compliment is true and well placed. Nothing can be more disastrous than a synthetic compliment —one that lacks basis in fact.

The field for the true compliment is limited only by your interest in a person—and your powers of observation. Study the next person you meet. Listen to her. Can you compliment her on her attire, the way she does her job, her pleasing voice, her sense of humor? No? Keep looking—there's *something* you can admire. When you do, you'll have a friend.

The other evening when I was dining out, I was introduced to a lady who was seated at an adjacent table. After our introduction I said, "I'm so happy to meet you. I have been admiring you all evening." She was vivacious, charming, and had the most beautiful gray hair. It was a sincere compliment, and the lady smiled her appreciation. I'm sure she will remember me if we meet again.

(3) Ask her opinion about something on which she is an authority. An airlines stewardess has the responsibility for making her passengers feel at home. She is responsible, not only for their physical comfort, but for their peace of mind as well. Occasionally, she is called upon to ease the anxieties of a passenger who has never flown before; and, from long experience, she has learned that the most effective way to do this is to get the passenger to talk about something she knows.

Try it yourself. Just ask the stranger you are introduced to for an explanation of her work or hobby—or her advice or opinion on something she knows.

On a flight to Pennsylvania some time ago, we encountered some rough flying. Streaks of lightning flashed across the sky, and the plane bounced up and down. I was seated next to a passenger who was making her first flight. I engaged her in conversation, and she told me all about having missed the flight she was scheduled to take. Our talk eased the tension for both of us.

(4) Make her feel important in front of others. One of the best ways to do this is to compliment her in front of her husband or employer. If you would double your popularity immediately, make people feel important in front of others. It costs you nothing; it's worth millions to them.

(5) Ask this magic question. "And then what did you do (or say)?" It never fails, for it subtly suggests open-eyed admiration for the speaker and interest in her past. Put this question to work for you, and watch your popularity zoom.

(6) Repeat a previous remark of his. This is the king of them all, smooth, subtle, on the button. For there is no greater compliment you can pay another person's intelligence than to be so thoroughly impressed with something he said, that 10 or 15 minutes later, you find occasion to repeat it back to him, word for word.

To be popular, you must work at it. Some must work harder than others. If your desire to be popular is strong enough, and you are willing to put forth the right amount of effort, you can achieve your objective.

Traffic Questions

(1) When a local operator answers a line signal, and finds that two parties are calling simultaneously, how should she proceed?

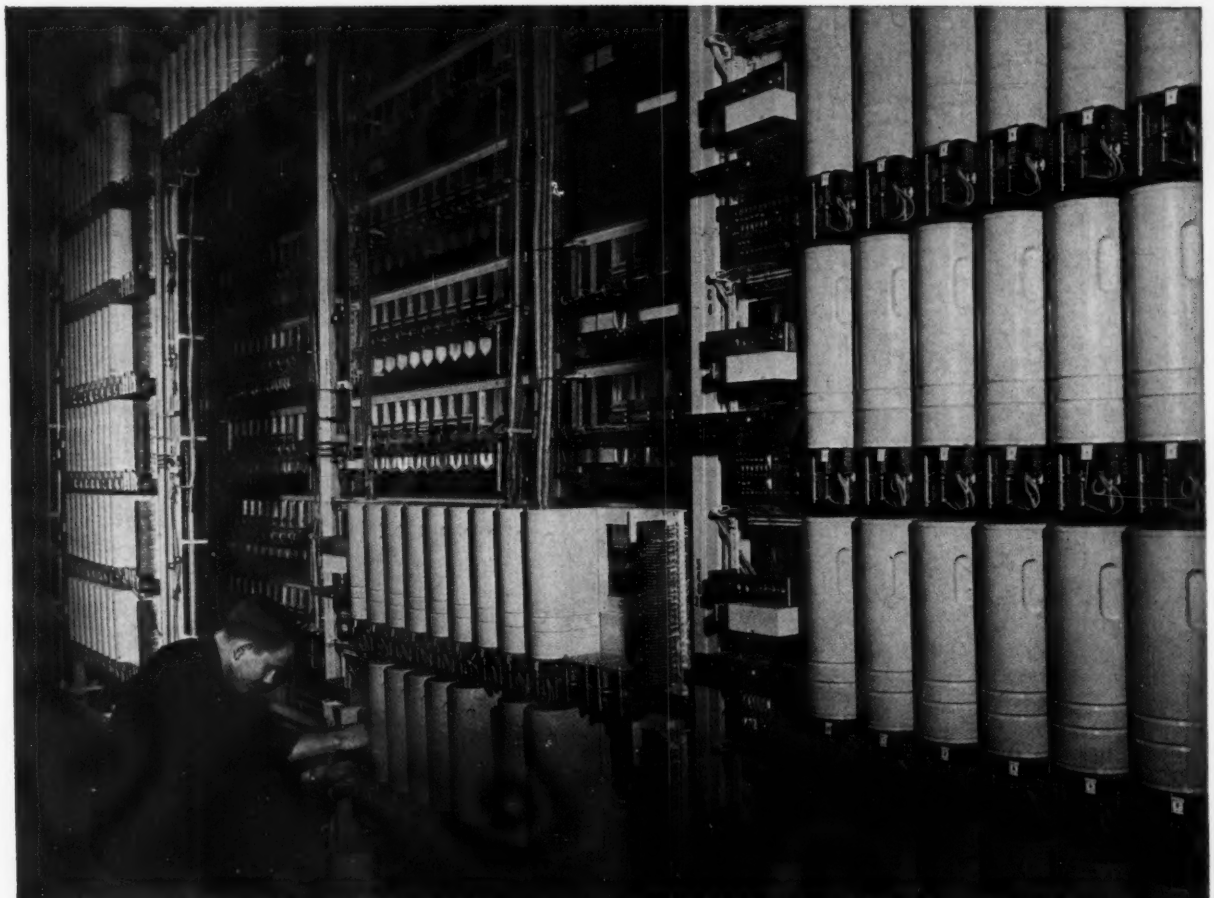
(2) If a local operator receives a call from a subscriber for a number which the subscriber can dial direct, or by dialing a code, what should the operator say?

(3) If the local operator receives a call for a number from a subscriber who can dial the number direct, and the calling party states that his call is an emergency, should the operator attempt to establish the connection without further questioning?

(4) When an operator understands a subscriber's order, or request, and it does not involve further immediate conversation with the customer, should the operator acknowledge and comply with the request?

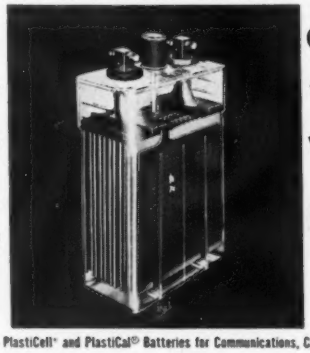
(5) Should the local operator use the customer's name if she knows it, in acknowledging a call?

Answers to questions are on page 58.



THE BATTERY DESIGNED FOR COMMUNICATION SERVICE—

Specify C & D *PlastiCell** Only C & D, of all the communication batteries (lead-antimony grids) available at competitive prices, have the features that make it the best choice for communication applications. For example, compact C & D PlastiCell batteries ■ Provide 12 to 14 years life in full float service ■ Eliminate the possibility of early cell failure due to sediment accumulation by triple insulation of plates ■ Reduce accidental breakage by using a shock-resistant plastic container sealed with a Hi-Impac cover ■ These benefits, plus many others make C & D your better battery buy. There are more than 30 PlastiCell sizes, all in plastic, covering 10 to 1680 ampere hours. One will meet your communication battery needs — whether for telephone, carrier or microwave service. A C & D representative will be glad to discuss your problems and make a recommendation. Or, write for a copy of Bulletin T-533.



C & D BATTERIES
of Conshohocken, Pa.
DIV. THE ELECTRIC AUTOLITE CO.

Manufacturers of Slyver-Clad® Industrial Batteries • PlastiCell® and PlastiCal® Batteries for Communications, Control, and Auxiliary Power • Producers of AutoReg® Silicon Chargers and AutoCal® Charger-Battery Combinations

Ten Loans Approved by REA Total $4,773,000

THE Rural Electrification Administration has approved loans totaling $4,773,000 to aid in the financing of local telephone system construction.

McDonough Telephone Cooperative, Colchester, Ill.; $740,000; Mar. 6.

With this loan, the company will be helped to improve service for 1,479 subscribers and furnish initial service to 173 subscribers. There will also be some service in a fringe area. The company proposes to acquire the properties of the Colchester Farmers Telephone Co., plus the subscriber-owned lines it serves, and the facilities of Blandinsville Switchboard Co. These companies now furnish common battery and magneto service to the existing subscribers.

The McDonough cooperative plans to replace the Blandinsville switchboard with a new dial central office, and to remodel a building in Colchester for dial office use. In addition, the company proposes to acquire two buildings adjacent to the dial office building in Colchester and remodel them for headquarters facilities.

REA loans to this borrower will help make possible new and improved service to 4,202 subscribers. Eight of the proposed twelve exchanges now furnish dial service to approximately 1,640 subscribers.

•

Uintah Basin Telephone Association, Roosevelt, Utah; $173,000; Mar. 6.

The company plans to use this loan to furnish initial service to 183 subscribers in the present service area, to construct new commercial office facilities in Roosevelt, and to install mobile dial radio equipment for system maintenance.

In order to furnish the new service, the association expects to add 18 miles of new line to its system and to acquire 15 miles of toll line from the Mountain States Telephone & Telegraph Co. The acquired line will continue to be used for toll purposes, and the facilities expanded to serve new subscribers in the area.

REA loans to this borrower will benefit 1,030 subscribers through six exchanges which are now providing dial service to approximately 790 subscribers.

•

Southern Telephone Co., Charlottesville, Va.; $180,000; Mar. 6.

This loan will assist the company to provide initial service to 345 subscribers in the present service area.

Loans to Southern Telephone will help make possible new and improved service to 2,687 subscribers. This includes 765 subscribers who are located near exchanges of the Virginia Telephone & Telegraph Co., which will provide switching service for them. The borrower's three exchanges are now furnishing dial service to approximately 2,345 subscribers.

•

LaCrosse (Wash.) Telephone Co.; $177,000; Mar. 6.

With the aid of this loan, the company will be enabled to improve service for 197 subscribers and furnish initial service to 52 subscribers. The borrower proposes to acquire and rehabilitate the Endicott Farmers Telephone Co. which provides magneto service to the existing subscribers.

A new dial central office will replace the present switchboard facilities at Endicott. The borrower plans service without toll charge between its two exchanges.

REA loans received by LaCrosse Telephone Co. will assist it to bring new and improved service to 690 subscribers. The system will consist of dial exchanges at Endicott and LaCrosse.

•

Farmers Telephone Cooperative, Kingstree, S. C.; $2,206,000; Mar. 8. This loan supersedes and increases by $315,000 an REA loan approved to the cooperative on March 1, 1961.

The funds will be used for the same general purposes as announced previously which are to provide telephone service to 2,659 new subscribers in six counties, construct 912 miles of line, and make extensive system improvements to enable the borrower to provide a better grade of service.

•

White River Telephone Co., Elkins, Ark.; $119,000; Mar. 9.

These funds will help enable the borrower to construct a dial central office at St. Paul, a newly created exchange area, and to serve 157 new subscribers in the present service area.

REA loans to the White River company will help make possible new and improved service to 934 subscribers. The system will consist of three exchanges. The Elkins and West Fork exchanges now furnish dial service to approximately 650 subscribers.

•

Standard Telephone Company, Cornelia, Ga.; $2,098,000; Mar. 9.

With this loan, the company will be assisted in providing dial service to 3,568 subscribers in the present service area. Facilities required include expanded central office equipment.

These funds also will be used to help provide a better grade of service for existing subscribers, including more private and semi-private lines. Both the Clarkesville and Hiawassee exchange buildings will be replaced with new dial central offices; and a new storage and warehouse building will be constructed at Cornelia.

REA loans to this borrower will help enable it to bring new and improved service to 10,401 subscribers. The proposed system will consist of eleven exchanges of which ten now furnish dial service to approximately 5,375 subscribers.

•

The South Slope Cooperative Telephone Co.; Norway, Ia.; $70,000; Mar. 9.

With the help of this loan, South Slope will be enabled to serve 132 new subscribers in the present service area, and to provide for an increase in the proportion of private and semi-private lines.

REA loans to the borrower will assist it to bring new and improved service to 1,507 subscribers. The system will consist of three exchanges. The Newhall central office is now furnishing dial service to approximately 350 subscribers.

•

St. Matthews (S. C.) Telephone Co.; $109,000; Mar. 9.

These and funds from prior loans will be used by the borrower to help provide initial service to 309 subscribers in its St. Matthews exchange area.

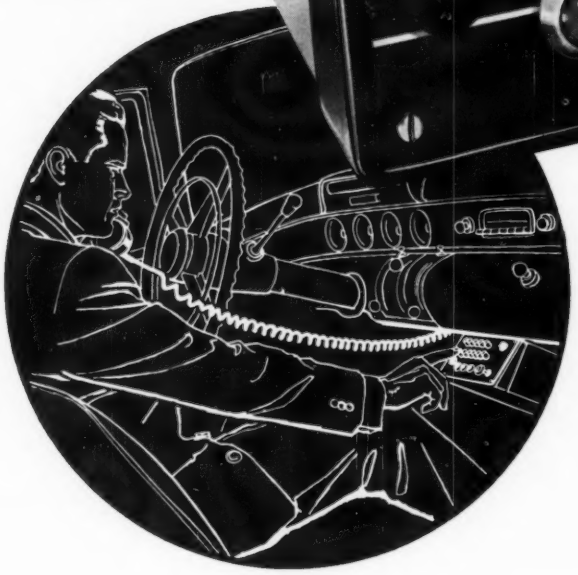
Provision also is made in the loan for a better grade of service to existing subscribers, including more private and semi-private lines.

REA loans approved to this borrower will aid it in bringing new and improved service to 1,391 subscribers. The three exchanges of the system now furnish dial service to approximately 1,135 subscribers.

•

Millington (Tenn.) Telephone Co.; $792,000; Mar. 9.

This loan will help enable the bor-



Motorola Telephone-in-the-car

Fully Automatic

...for unattended service
...added revenue

Now you can provide up to the minute "telephone-in-the-car" service for business and professional men on-the-go! With Motorola Pushbutton Radiotelephone, you can expand your automatic service facilities and add to your profits, simply and easily. Here's how:

At the exchange. The Motorola system is fully automatic in operation . . . connects directly to your switching equipment with no modification for radio required.

In the car. Pushbutton number selection is convenient for the user. And with the fully telephone-engineered Motorola "telephone-in-the-car", he enjoys a service level equal to that provided to your wire line subscribers.

Your Motorola representative will provide full system facts—explain how your company can profit with this expanded service. And he'll give you a complete promotion program to help gain your extra revenue "telephone-in-the-car" subscribers. Call or write today.

Write Dept. ATP112.

Motorola Telephone-In-The-Car Promotion Kit includes a comprehensive program designed to sell the service in your area.

MOTOROLA PUSHBUTTON RADIOTELEPHONE

Motorola Communications & Electronics, Inc., 4501 Augusta Blvd., Chicago 51, Ill., A Subsidiary of Motorola Inc.

rower to make the following additions and improvements to its system:

1. Install facilities to permit service without toll charge between its Millington exchange and the city of Memphis.
2. Expand the PBX facilities now serving the Millington Naval Air Station.
3. Construct an addition to the headquarters facilities.
4. Provide mobile dial telephone service for 10 new subscribers.
5. Provide for an increase in the proportion of private and semi-private lines, and make other improvements to the system.

REA loans received by Millington will help make possible new and improved service to 5,397 subscribers. Four of the proposed five exchanges now furnish dial service to approximately 3,675 subscribers.

On behalf of the Advertising Club of Lincoln, Neb., Mayor Bartlett Boyles, at left, presents the first place trophy for 1960 to A. B. Gorman, Lincoln Telephone & Telegraph Co. advertising manager, for the company's campaign on direct distance dialing. During national advertising week each year, the ad club sponsors a public exhibit in which Lincoln advertisers present displays of advertising programs and campaigns. LT&T was presented with a permanent first place plaque and a "traveling" trophy (pictured above), which the winning company may keep for one year.

Lincoln (Neb.) T&T Wins Prize for DDD Ad Campaign

The advertising campaign of the Lincoln (Neb.) Telephone & Telegraph Co. to announce Direct Distance Dialing (DDD) has won the first-place award of the Advertising Club of Lincoln for 1960.

The LT&T campaign on DDD was directed generally at three groups:

(1) Subscribers at Lincoln and 14 near-by exchanges in which coast-to-coast Direct Distance Dialing was being offered for the first time.
(2) Customers at Beatrice, Auburn, David City, Wahoo and Hebron, and near-by exchanges, who had been receiving Direct Distance Dialing to Nebraska points, and who now would receive coast-to-coast service.
(3) Subscribers of four connecting companies in the DDD area.

The cut-over took place on Dec. 4 and the advertising campaign was divided into five general phases. The advance notification began in September, with group meetings of employes who were given booklets of instruction and were shown demonstrations of DDD on an electrically operated board.

Stories giving employes information were also printed in the *Lincoln Telephone News*, a monthly magazine for LT&T employes. Letters were written to customers whose telephone numbers would be changed to seven numerals. This was coordinated with a news release and advance advertising.

An intermediate program of notification of the date, and education for use of the service, followed. Booklets of instruction were printed, and mailed to 65,000 subscribers in LT&T and connecting company exchanges. Special envelopes were used to announce the date. Thirty-five women then called some 50,000 subscribers at Lincoln and 14 nearby exchanges to go over the instructions and to answer questions. Personal interviews were set-up with larger business users.

The 36-page booklets contained seven pages of instructions with examples of how to dial calls, as well as listings of 1,500 dialable points with code numbers. Indexed pages for personal listings were also provided.

Newspaper, radio and television advertising were used to announce the mailing of the booklets and to provide a build-up to the date of service. Thirty-two 24-sheet posters were displayed on billboards in the Lincoln area to announce the date of service, and for 30 days after the cut-over, to promote the use of the service.

Advertising and publicity were concentrated just prior to, and on the date of, the cut-over. Full-page newspaper advertisements were used at principal exchanges, along with radio and television announcements.

A 60-second film was made for television in which a "customer" demonstrated the dialing of a call to a telephone in Chicago and the use of the DDD booklet of instructions. Newspaper ads also carried a step-by-step explanation of the dialing of calls.

Other media included talks and demonstrations before school groups and civic clubs, and advertisements in miscellaneous publications. Two-color posters and counter cards were run on silk screen for use in company business offices and for display in windows of local merchants who wished to use them. Separate posters were prepared for use before and after the cut-over. Ads were also prepared for printing on the face of envelopes used for mailing monthly statements.

Special advertising was provided for use in the telephone directory. The directory also contained detailed instructions for the use of Direct Distance Dialing and a list of dialable points with code numbers.

Following the conversion, a program of promotion has been carried out which, the LT&T company says, will be continued indefinitely.

Announce Dates for Global Communications Symposium

The Fifth National Symposium on Global Communications, sponsored by the American Institute of Electrical Engineers (AIEE) and the Institute of Radio Engineers (IRE) Professional Group on Communications Systems, will be held May 22 to 24 at the Hotel Sherman, Chicago.

The three-day program will feature 90 papers on all phases of communication, including radio wave propagation through the earth's deep rock strata, electronic transmission of mail, space communication with gamma radiation and a global party line concept of satellite communications.

Exhibits by more than two score manufacturers and engineering organizations in the communications industry also will be displayed during the meeting.

Look! Two men can do the work of four...

Actually, with this new Powers-American body and equipment combination, two men can breeze through construction and maintenance jobs that often take a crew of five or more. The Series 555 body, featuring reduced overhang, is common-sense designed to furnish more-than-ample shelves, bins, compartment and cargo space. The corner-mounted "Pole-Master" derrick hydraulically spots and holds at any point from carrying position to ground, anywhere in a horizontal arc that reaches from one side of the body to the other. Optional "Earth-Master" digger automatically attaches to derrick head sheave extension to hydraulically dig anywhere in the derrick horizontal range.

The Series 555 saves where it counts . . . in manpower and on-the-job time. Equally important, its initial cost goes easy on the new equipment budget. Why not send for details and down-to-earth prices on this work-speeding unit today!

McCABE-POWERS BODY COMPANY
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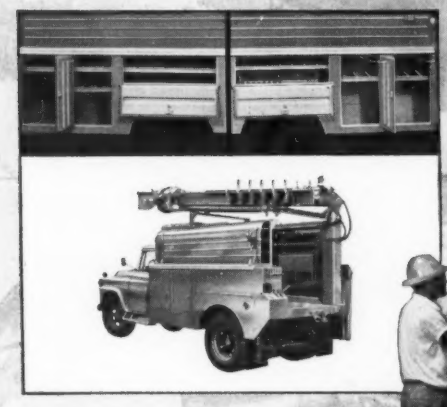
625 Cedar St., Berkeley 10, Calif. • 5525 S. E. 28th Ave., Portland 2, Ore.
12121 Los Nietos Road, Santa Fe Springs (L.A.), Calif.



Utilities expect more from

POWERS *American*

The budget-trimming Series 555 is 112" long, fits 84" CA chassis. Corner-mounted Series PM-30 "Pole-Master" derrick has hydraulic head sheave extension; handles 4-ton loads and 55' poles with ease. Self-stowing "Earth-Master" digs to 10'6" deep, 24" in diameter, in any soil. Underfloor winch line operation is available.

The Galvanized Steel Strand with the built-in raincoat

Everybody talks about the weather . . . CF&I *does* something about it. To protect Galvanized Steel Strand against corrosion, CF&I builds in a zinc coating that shrugs off moisture. The result is a long-lasting, weather-resistant steel strand that is ideal for messenger wire applications.

Also highly suitable for guying assignments, CF&I Galvanized Steel Strand is made in seven- or three-wire constructions . . . in accordance with ASTM specification A-122. In addition, it can be tailor made to meet your particular specifications.

Like all CF&I products, Galvanized Steel Strand is made by a nation-wide company to meet high American standards. For immediate delivery, contact your nearby CF&I sales office.

THE COLORADO FUEL AND IRON CORPORATION
Denver • Oakland • New York
Sales offices in All Key Cities

WAY TO ECONOMIC GROWTH

Continued from page 26

Finally, it requires labor agreements that spread the benefits of automation among all groups, and price goods and services into the market instead of out of it. The time has come—it is overdue—when labor contracts *must* be based more realistically on these economic facts of life.

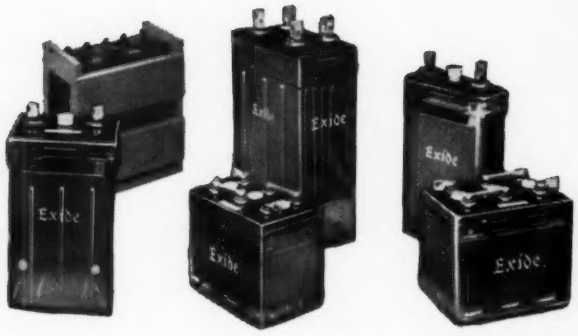
And here I must say this: If government will not refrain from influencing bargaining—if the shadow of government is on the walls around the table—then the best of effort in the best of faith will not get sound results. As sure as you and I are here today, the pressure for settlements will gum the works.

A Dynamic Economy

No one I know has a blueprint for producing stable employment in the midst of change. Certainly I don't have one. Furthermore there would be something all wrong with a concept of completely stable employment. A dynamic economy must have continuous movement of people and continuous change *in* people. It must have men and women who can use their resources in more ways than one, and make jobs as well as take them.

Heaven knows this is no argument in favor of unemployment. What I am getting to rather is that the degree of challenge a man faces in his work, the kind of resources he develops in his work, the breadth of his education on the job and off—these in the long run will do as much to solve the problems of employment as anything I can think of. It is not only that education is necessary to equip people for the higher-grade jobs that technology multiplies; the thing of equal importance is that the challenge and experience and education a man gets should give him the strength, the knowledge, and the nerve he needs to make his life count in any situation.

I believe that the degree to which we challenge people; the depth of education *in* business; the support of education *by* business; yes, and the degree to which educators and business people get to know each other, criticize each other, and learn from each other—these it seems to me can be among the strongest forces enabling us to deal with the problems of change in our quest for economic growth. More than that, I am convinced that business and education have *got* to get together on a year-round basis—and not just when college and company presidents swap



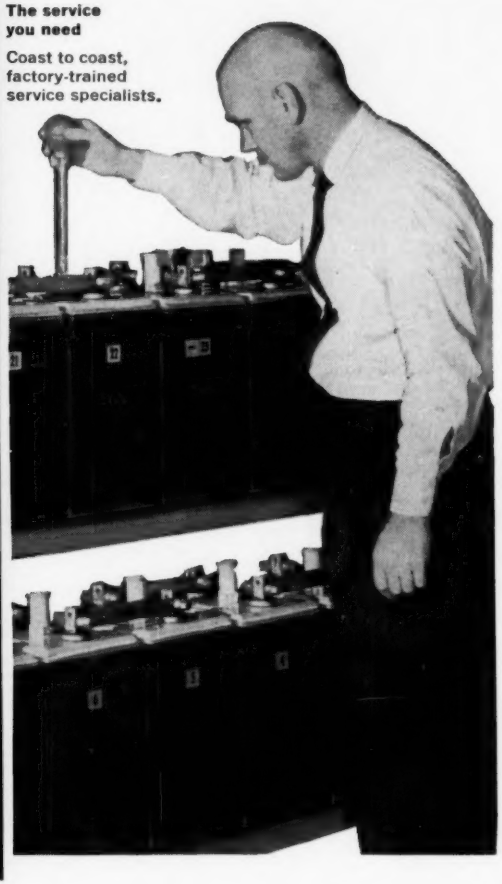
The battery you need

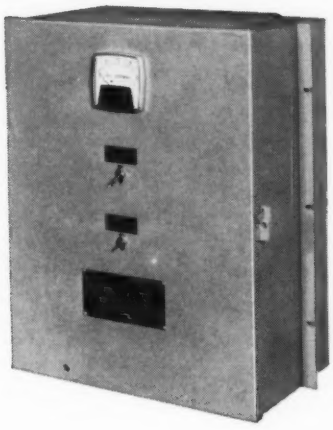
Pasted plate Tytex with Silvium* or calcium, long-life Exide-Manchex Plante with Silvium, low-maintenance pocket positive nickel-cadmium, and the new 20-year Exide-Ironclad tubular with Silvium.

FOR HIGHEST ECONOMY

The service you need

Coast to coast, factory-trained service specialists.





The rectifier you need

Complete line of advanced-design silicon diode rectifiers.

BUY YOUR BATTERY POWER AS A PACKAGE

You spend your money for battery power in three ways: battery expense, rectifier expense, and service expense. But when you buy an Exide battery power package, you economize on all three.

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compliments at commencement exercises.

Growth Forecasts

To conclude now, we in the Bell System have made some estimates of future economic growth and I will give them to you briefly. We expect Gross National Product in the 1960s may rise slightly more rapidly than the long-term trend of 3 per cent a year. We do *not* think it will rise by that wishful 5 or 6 per cent. By 1970, we expect the labor force, population, and GNP per capita each to rise about 20 per cent—total GNP about 40 per cent—and industrial production about 50 per cent.

This is good solid growth. Its achievement will reflect a dynamic, sound economy, enabling us to provide strong defense facilities, maintain a position of leadership in the world, and attain better standards of living for our own people.

But we will never get this by expecting it. We will get it only by working for it. We need all our wits about us but we also need something more. I mean dedication, devotion, the sense of mission. Can free enterprise serve private aims *and* public ends? I believe with all my heart that it most assuredly can—and will.

So far as the Bell System is concerned, we are going all the way to turn out an abundance and variety of service that will go far beyond anything we have been able to do up to now. We intend to give this country such a quality and quantity of communications that business and government and everyone all over this land will find it impossible not to use them to ever-increasing advantage.

You are going to find that the means for communicating all forms of intelligence—words, pictures, documents, data of all kinds, *everything*—will surpass anything you have ever dreamed of. This won't happen in five minutes, but we shall work at it and work at it and work at it and we *will* bring it about.

Our job, our mission, is to put services at your disposal that will help you exceed your own best expectations in your own enterprise. We are sure these services will increase the efficiency of all business, reduce costs, help strengthen profits, and lead to better values for consumers. We are not going to be satisfied to give you anything less.

Perhaps some of you have read or heard the comments of businessmen, economists, and students who have traveled to Russia and watched Russian industry at work. In the comments I have come across, varied as they are,

one note is often repeated. This is that there is a sorry lack of the free, bubbling, zestful, individual human spirit. Our whole tradition in America, and all we have done, are founded on that spirit. Our whole future depends on it. We business managers today look to government — in Washington, in Michigan, in every state and community—to establish the political conditions that will give this spirit room. We look to educators to instill and nourish it in their students. And we ourselves must never cease to work for a climate *within* enterprise, within the organizations we manage, that will inspire and release it in every man and woman at work.

CLASS ROOM INTERVIEWS

Concluded from page 38

phone's use for this "brain-picking" interview procedure is enthusiastically endorsed by Harold Rubin of the college staff.

Mr. Rubin, reporting in *College and University Business*, said that using the telephone to bring mental giants to the campus represented a large saving in time and expense. Under this program of teaching the girls about government, industry and the arts through interviews, no travel bills have been incurred, no lecture fees paid, no committees needed to be set up. Further, the college authorities state that long-distance telephone interviewing stimulated the students' learning rate.

James Burkhart of Stephens' social science faculty is responsible for the interview idea. General Telephone of Missouri installed in Mr. Burkhart's American Government classroom a telephone connected to the college switchboard, and hooked up to a microphone placed on a table in the center of the room an amplifier and a loud-speaker.

Mr. Burkhart drew upon his contacts in government, labor, management, politics, writing, and farming, to mention some of the fields from which notables were selected. Among the speaker guests at these telephone classes have been: Norman Cousins, editor of *Saturday Review;* Alice K. Leopold, former assistant to U. S. Secretary of Labor; Mary Roebling, member of the board of directors of the American Stock Exchange, and Budd Schulberg, author and playwright.

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"It goes far toward making a man faithful to let him understand that you think him so; and he that does but suspect I will deceive him, gives me a sort of right to do it."—SENECA.

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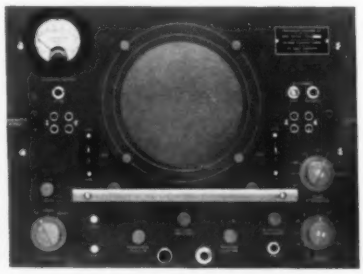

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Carolina T&T Head Cites 1960 Progress at Annual Meeting

"The year of 1960 was a year of progress for Carolina Telephone & Telegraph Co.," H. Dail Holderness, president of the company, stated at the annual meeting of stockholders, held in Tarboro, N. C. He continued:

"Long-distance conversations handled by Carolina telephone rose a little better than 8 per cent. During 1960 the company completed more than 12 million long-distance messages—the largest flow of traffic ever handled.

"Telephones gained during the year numbered 15,848 — only 596 short of 1959's all-time record. Rural installations accounted for more than half of the additional telephones. Included in the telephones gained were a significant number of business extensions brought about by installation of private-branch exchanges," Mr. Holderness reported.

The president noted that employes of the company had established a new record in merchandising in 1960, reporting sales which will produce more than 2 million dollars on an annual basis.

He said, that during the year, Carolina telephone continued its long-range plans to provide the most modern telephone service possible in its operating area. In 1960, the company became 100 per cent dial with the conversion of the Maxton exchange; added 13 exchanges to its Direct Distance Dialing (DDD) network (making 40 exchanges where subscribers now have access to this service); introduced a new compact telephone, the Starlite; expanded its microwave system with a new route between Rocky Mount and Williamston; and began a gradual conversion of telephone numbers to a new seven-digit all number system as part of a nationwide plan to standardize telephone numbers.

President Holderness said that in September Hurricane Donna left extensive damage to pole lines and aerial cable, particularly in the New Bern district. Long-distance service was disrupted in 75 per cent of the company's exchanges, and local service was inter-

Answers To Questions On Page 48

(1) The operator will repeat the order which she understood first and then say: "Will the other party call a little later, please?"

(2) If the subscriber can dial the number direct, say: "Your telephone is arranged to dial (called place) numbers direct."

(3) Yes.

(4) Yes.

(5) Yes.

rupted in many communities. A task force of some 650 men worked long hours and, within five days, restored all long-distance service, and the better part of local service, in all affected areas. Maintenance costs and capital expenditures necessitated by the hurricane totaled about $425,000.

Mr. Holderness stated that expenditures for expansion and improvement of telephone plant in 1960 amounted to more than 9 million dollars. It is anticipated that such expenditures will total about 11 million dollars in 1961.

Additions to telephone plant in 1960 brought the company's plant investment at the year-end to an all-time high of more than 100 million dollars.

Earnings per average share amounted to $1.91—a slight increase compared with the previous year. Dividends were paid at the annual rate of $1.60 per share.

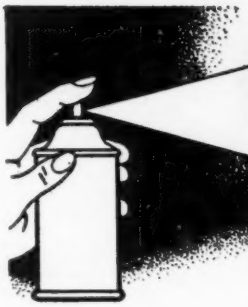
Minn. Switchman Cited by Jaycees As Outstanding

Joseph Rassieur, a 36-year-old Mankato (Minn.) Citizens Telephone Co. switchman, was recently named by local Jaycees as Mankato's Outstanding Young Man. He is the 15th Mankato citizen to be thus honored.

Mr. Rassieur was cited for his work in the Jaycees, in his church, in Cub Scouting, and Civil Defense, along with participation in other local organizations.

At recent Jaycees Bosses Night banquet in Mankato, Minn., honors went to Mankato Citizens Telephone Co. switchman, Joseph Rassieur, as "Mankato's Outstanding Young Man." Here, Bert Rose (left), general manager of Minnesota Vikings pro football team, and banquet speaker, presents a plaque to Mr. Rassieur.

A past president of the local chapter of the Jaycees, he was singled out, it is reported, especially for successful



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promotion of the Get-Out-the-Vote campaign last year; for getting behind United Fund, Youth Guidance Council, and for work on the ambulance action committee of the Jaycees.

Besides these activities, he has headed up projects beneficial to children and youth, such as a teenage rodeo, a Christmas shopping tour for needy children, Halloween parties for boys and girls, and a soap box derby.

In order to help assure the then-new Salk polio shots for persons who might not otherwise have been able to get them, he also helped set up two clinics for administering the shots.

An Iowan and a Navy veteran of World War II, Mr. Rassieur attended Drake University, the University of Houston, Tex., and Wright Junior College in Chicago, Ill. He moved to Minnesota in 1946.

In Cub Scouting, he has served as cub master of a local school pack.

He is currently serving on the Minnesota Civil Defense staff in charge of the communications center for Minnesota evacuation headquarters at Mankato.

Mankato Citizens Telephone Co. management also points to this award to Mr. Rassieur as further evidence of the active part that telephone employes play in the life of the community the company serves.

U. S. Tax Receipts Hit High, Tax Foundation Book Shows

Each American family's share of the estimated total of fiscal 1961 taxes to be collected by federal, state and local governments is figured by Tax Foundation, Inc. to be $2,390, up $113 from the preceding fiscal year.

The estimates show total government tax receipts at 135 billion dollars—a new high—up 8 billion dollars from fiscal 1960.

According to the foundation's latest edition of its biennial publication, "Facts and Figures on Government Finance, 1960-61," fiscal 1960 tax collections (127 billion dollars) were more than double those of all governments in fiscal 1950.

In a foreword to the new edition, chairman Roswell Magill of the foundation says: "Never before in peacetime has this country been faced with so many national and international questions of great importance.

"How can we maintain peace with liberty for ourselves and for the free world? Can we extend our freedoms to the enslaved peoples short of war?

"Can we safely permit our own central government to expand its powers? How can we achieve the great economic growth this nation needs for jobs and continued prosperity?

"Can the federal government do all these things without destroying private initiative by heavy taxation, or worse still, by ruinous inflation?

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one can consider, analyze or talk intelligently about the enormous problems of government without some knowledge of fiscal facts and figures. This volume is addressed primarily to the financial aspect of these many questions."

The book has 275 pages and includes 189 tables.

Prices are: 1 copy, $3.50; 2-9 copies, $3.25; 10 or more, $3.00.

It can be ordered from Prentice Hall Inc., Englewood Cliffs, N. J.

European Nations To Hold Communications Meeting

The second Conference of European Postal and Telecommunications Administrations will be held at Torquay, England, from Sept. 9 to 23. The British Post Office will host 120 delegates from 18 other European nations.

This meeting will be the second of its type; the first one was held last year in Paris.

One of the purposes of the conclave is to secure maximum cooperation between the participating countries, in sending telephone calls and mail around the world.

Arrangements have been made for the simultaneous translation of speakers' remarks into English, French and German, to facilitate the exchange of ideas.

Countries, which will be represented at the conference, are: Austria, Belgium, Denmark, Finland, France, Great Britain, Greece, Iceland, Italy, Ireland, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and West Germany.

Fiore Is Telecommunications Advisor—Latin America

The Business and Defense Services Administration, U. S. Department of Commerce, has announced the appointment of C. F. Fiore as Telecommunications Projects Advisor-Latin America. In this capacity, Mr. Fiore shortly will institute a country-by-country survey of existing and projected communications systems in Latin America to study the outlook for exports by the U. S. telecommunications industries.

This project is the first of a series designed to assure that American manufacturers of communications equipment, as well as those who provide related services, are fully informed regarding actual and potential markets in Latin America, and that they may improve their competitive positions there.

As Telecommunications Projects Advisor, Mr. Fiore will assist U. S. Foreign Service posts in Latin America in the collection of data through discussions with local telecommunications officials on plans for modernization or expansion of facilities; standards for specifications; procurement and long-term financing practices; and the need for technical assistance.

During the course of the survey—which will take about nine months—U. S. industry will be informed constantly of the business opportunities developed. Every effort will be made to bring the communication needs of this area to the attention of U. S. manufacturers.

When the study is completed, a final report will be disseminated to interested agencies of the U. S. Government as well as to industry. Such a study will, in the opinion of BDSA, provide a forecast of the scope and nature of the Latin-American communications market and point to the steps necessary for the expansion of exports in this field.

Mr. Fiore was formerly employed by International Telephone & Telegraph Corp., New York City, and recently spent six months in the Communications Industries Division, BDSA.

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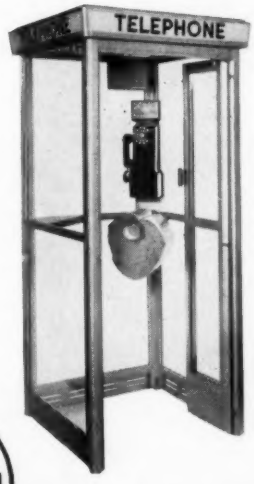

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Announce Dates for 1961 USITA Marketing Seminar

AN EXECUTIVE workshop in telephone marketing, sponsored by the United States Independent Telephone Association, will be held this year on July 16 through July 23 at the Kellogg Center, Michigan State University, East Lansing. The marketing seminar is sponsored in conjunction with Michigan State's marketing and transportation administration department of the Graduate School of Business, Continuing Education Service.

A brochure, outlining the program, was mailed to the USITA membership recently. Deadline date for applications is Apr. 5 and enrollment is limited to 35 students. Cost of the seminar, covering all direct workshop expense, including housing, meals, text books, materials and instruction is $275.

The USITA Marketing Committee, in outlining the need for the program, states that it feels that there is a strong need for Independent company leaders to obtain an understanding of effective marketing and to build a desire and ability to encourage a broad marketing program in their own companies.

The seminar, instead of being a discussion of "how to sell," is designed to give participants an awareness of the new dimension of marketing in the telephone business and to add to their knowledge of marketing philosophy, principles and methods.

Designed specifically for telephone executives, the workshop is a study of marketing philosophy, strategies, tactics and manpower requirements for the industry.

Objectives of the program are:

(1) To meet increasing competition.
(2) To develop an attitude of customer orientation and total service.
(3) To add to the participants' knowledge of marketing philosophy, principles and methods.
(4) To review the financial structure of a business from a profit orientation, rather than in terms of costs and expenses.
(5) To present methods of internal and external personnel selection with emphasis on marketing-oriented people.
(6) To develop ways and means of transmitting the total service concept throughout the telephone company organization.

Members of the teaching staff are: Thomas Arthur Staudt, professor, and head of Michigan State's department of marketing and transportation administration; Edward M. Barnet, professor of business administration, and director of programs in mass marketing and management of food distribution, at Michigan State; William J. E. Crissy, professor of marketing and transportation administration; William Lazar, associate professor in general business; Clark DeHaven, coordinator for organization management and program director for executive development programs at Michigan State, and Michael Schiff, professor of accounting and chairman of accounting statistics and taxation in the Graduate School of Business Administration, New York University. Other faculty members are Robert Elliott and Don Taylor.

The following topics will be presented:

The marketing concept and its application to the Independent telephone company.

The organizational implications of the marketing concept as applied to the Independent telephone company.

The manpower requirements of the total marketing concept in the Independent telephone company.

Gearing the financial side of the Independent telephone business to maximizing the return on investment.

Marketing strategies and tactics as applied to the Independent telephone company.

Who are our competition?

Effectively planning our business around customer orientation.

Principles and methods of management problem-solving.

Criteria of good management decision-making.

Measuring and analyzing customer-prospect behavior.

Problems facing corporate level executives in fostering customer orientation.

Identifying the training and development problems.

Application forms for the seminar and brochures are available from the Graduate School of Business, Continuing Education Service, Michigan State University, East Lansing.

Members of the USITA Marketing Committee are Allan Stacey of Sunland, Cal., chairman; Earle G. Bellamy of Knoxville, Ia.; E. H. Utzman of Brownwood, Tex.; John McHenry of Jefferson City, Mo.; R. Parker Sullivan of New York, N. Y. and Toral Duckett of Lincoln, Neb.

Mr. Bellamy and Mr. Utzman serve as the sub-committee for the marketing seminar.

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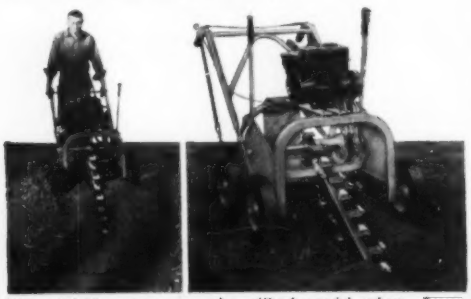

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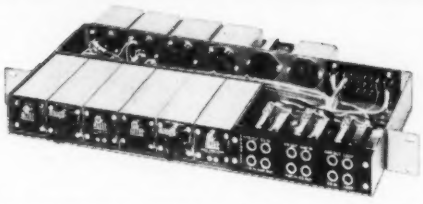

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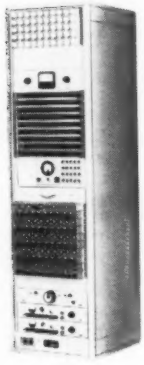

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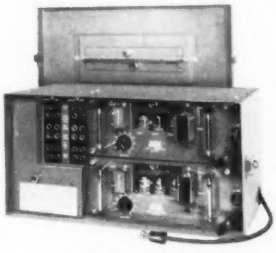

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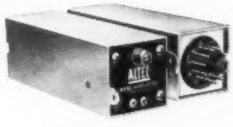

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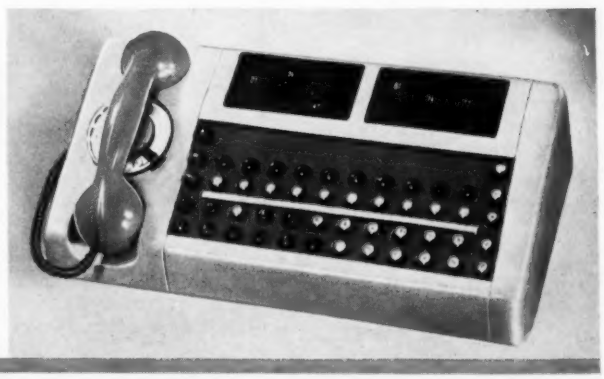

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Armed Forces Ask Inventors' Help on Ideas and Problems

The U. S. serviceman of the future may wear a servo-assisted power suit, be supported by artillery firing shells with plastic components stronger than steel, and use small arms that are virtually noiseless, flashless, and smokeless, if American civilian inventors can supply the brainpower necessary. The development of these and 120 other new devices and design improvements is requested by the Department of Defense through the National Inventors Council (NIC), Office of Technical Services, U. S. Department of Commerce.

Other items in the Inventors Council's latest list of technical problems challenging the imagination and ingenuity of the nation's inventors are:

Development of a lightweight body armor able to stop projectiles from the most advanced anti-personnel weapons.

A means of supporting stable observation platforms at fixed altitudes between 30,000 and 100,000 feet.

A lightweight mechanical arm to safely handle sensitive pyrotechnic composition.

A method of observing the inside of working rocket motors.

A distinctive audio signal device capable of making a sound like nothing normally heard.

These 123 new developments needed by the Armed Forces are described in a free publication, *Inventions Wanted*, published by the council.

The NIC has served since 1940 as the "open door" in Washington through which civilian inventors may bring their inventions to the attention of the Armed Forces, and through which the military can inform inventors of defense inventive needs. The Inventors Council is composed of civilian scientists and engineers and the research chiefs of the Army, Navy and Air Force. Its chairman is Dr. C. S. Draper, head of the Department of Aeronautics and Astronautics, Massachusetts Institute of Technology. The administrative staff is part of the Commerce Department's Office of Technical Services, whose director, John C. Green, serves as executive director of the council.

The current list of inventions wanted covers virtually every field of scientific research. In electronics, for example, the military needs an electrically and acoustically silent battery-powered motor and improved batteries, as primary and auxiliary power sources, able to produce 100 kilowatts for 15 minutes—500 watt-hours per pound or 19 watt-hours per cubic inch.

Also in demand is an electrical generator providing both ac and dc power from shafts turning at 50,000 to 100,000 rpm; plus a low-energy, switching

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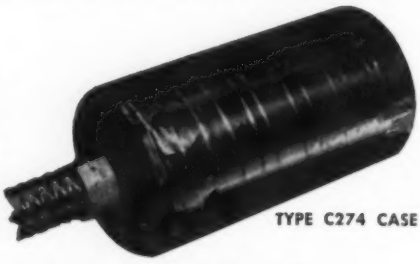
These assemblies can be equipped with loading coils, capacitors, inductors and MF units.

NOTE:
These assemblies are completely covered with plastic tape to protect all metal from electrolysis and other soil corrosive agents.



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device capable of at least 100 reliable operations, and high frequency transistors that can handle up to 100 watts of power.

The list also includes high-power electric servos, a strain gauge with a 2- to 5-volt output; and low-voltage vacuum tubes.

Machine processing requirements include:

An analog-to-digital converter to process large volumes of all types of data.

A self-organizing computer able to perform functions analogous to human thinking.

A computer memory device with a 0.01 microsecond access time, a ten-million-bit capacity, and a volume of less than 1 cubic foot.

Other electronic devices wanted are—mechanism to automatically transfer oral or handwritten information into digital information signals, and techniques for electronically simulating human perception processes of judgment, observation and environment in recognition of patterns and symbols.

Among other items sought are a device for converting heat into electricity, and a low-speed field data printer.

The military also is looking for a quiet, 25-hp. hydraulic pump; as well as a multipurpose pump weighing less than a pound capable of pumping 30 to 40 gallons per minute; a quiet, high-torque speed reducer able to handle 50 to 1,000 hp.; and an air heater for high-pressure, high-temperature use.

New materials wanted include a light reflective substance that is transparent to radio frequency radiation; and high temperature plastics for fuel containers.

Ideas for new testing applications consist of a notch-impact test for thin metal sheets, nondestructive test to measure bond strength between similar and dissimilar materials, and a mechanical bond test for multi-layer laminates.

The list contains a requirement for an easy way to drive stakes into frozen ground. The Army wants a device able to sink a stake 12 inches in the ground in no more than a minute, regardless of weather!

Inventors having possible solutions to these and other problems are encouraged by OTS Director Green who points out that answers to the multitude of technical problems now confronting the Armed Forces are needed promptly to prevent delay in research.

"The National Inventors Council cannot engage in any financial transactions regarding inventions or patents," explains Mr. Green, "but it does promptly evaluate all submissions, and turn over

to the proper military agency those appearing worthy of further evaluation."

Any inventor with a proposed solution to one of the problems outlined, or who has an idea for something entirely new, should describe his proposal *in writing*, and send it to the National Inventors Council, OTS, U. S. Department of Commerce, Washington 25, D. C.

Birch Is Traffic Director For GT&E Service Corp.

Leo A. Birch, traffic administrator for GT&E Service Corp., has been named traffic director, Walter G. Wright, vice president-operations, has announced. Mr. Birch succeeds Allen W. Pyrke, who died on Mar. 12.

Born in Elizabeth, N. J., Mr. Birch attended Rutgers University.

He was associated with the Western Electric Co. in Newark, N. J., before joining the General Telephone Co. of California in 1949. He held various positions in the General company's traffic department, and was division traffic superintendent at Santa Barbara when he was transferred to GT&E Service Corp. as traffic administrator in 1958.

Obituaries

ALLEN W. PYRKE, traffic director of General Telephone & Electronics Service Corp. died on Mar. 12.

Born in Port Henry, N. Y., Mr. Pyrke was graduated from Cornell University with an A.B. degree in 1934. He was associated with Bell Telephone Co. of Pennsylvania at Pittsburgh before joining the General System as traffic superintendent for General Telephone Co. of Pennsylvania in 1946.

He subsequently became general traffic superintendent for that company, and in 1954, was transferred to the GT&E Service Corp. as traffic director for the General System.

•

MRS. VESTA L. CLARK, 88, of Plattsmouth, Neb., died Mar. 16 at Hulett, Wyo., at the home of a daughter, Mrs. Fred Borne.

A telephone pioneer, Mrs. Clark was employed in 1910 with the Union (Neb.) Telephone Co. as an operator.

In 1928 she became chief operator-cashier at Union for The Lincoln Telephone & Telegraph Co. and in 1936 moved to Murray as chief operator-cashier. She retired in 1937.

Mrs. Clark is survived by three sisters, three brothers, seven grandchildren and 12 great grandchildren.

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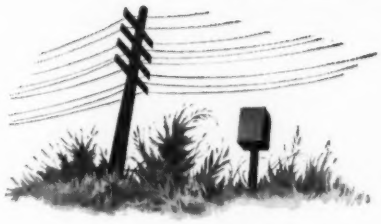

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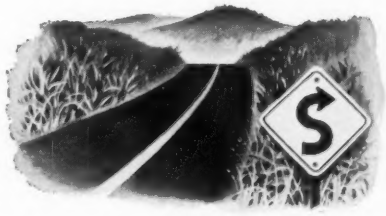

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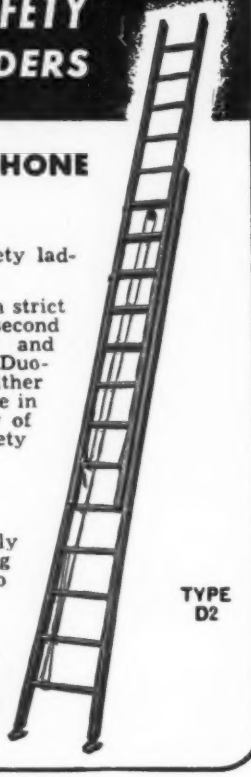
Duo-Safety ladders will be shipped immediately upon receipt of order! A planned stock-piling program assures really fast action — there's no delay the Duo-Safety way!



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G. B. Foscue Jr. Named Head Of Consolidated Telephone Co.

Garland B. Foscue Jr. was elected president and treasurer of Consolidated Telephone Co., Florence, Ky., to succeed his father, the late Garland B. Foscue, at the annual meeting of the company's board of directors.

The directors also elected L. T. Utz, vice president and re-elected him secretary, a position he has held for several years.

Roy Brooks was appointed general plant superintendent of the company.

Mr. Foscue joined Consolidated Telephone Co. on Jan. 1, 1949 as vice president and general manager.

He started his telephone career in July 1935, following graduation from Lehigh University, with the former Gary Group of Independent telephone companies.

In addition to staff positions held in the Kansas City, Mo. and Ft. Wayne, Ind., headquarters offices of the Gary group, Mr. Foscue served as assistant general manager of the Texas Telephone Co. of Sherman, Tex., and district manager of the Iowa Telephone & Telegraph Co. of Dyerville, Ia.

He left the Gary Organization in 1946 to become traffic superintendent of the Southwestern States Telephone Co. of Brownwood, Tex., the position he held when he joined Consolidated Telephone Co.

Mr. Utz became associated with Consolidated Telephone Co. on June 14, 1949, as accountant. On Apr. 5, 1952, he was elected secretary of the company.

He was graduated from Eastern Kentucky State College in 1948 with a

Enough Profit

"It seems to need saying that our biggest obligation to all our public is to earn a profit—not excessive profits, but enough.

"Enough to justify a continued program of research that will allow new products to spring from this industry and maintain its growth.

"Enough to allow continued expansion of the industry. . . . Enough to allow healthy market development. . . .

"Enough to support the growth of our national economy on a healthy competitive basis, and to push back the growing specter of government control."—DAVID H. DAWSON, *vice president, E. I. Du Pont de Nemours & Co.*

bachelor of science degree. Following graduation he became associated with Haskins & Sells, certified public accountants, in Cincinnati. He was with this firm until he joined Consolidated Telephone Co.

Mr. Utz served with the Armed Forces in the Pacific Theatre in World War II.

Mr. Brooks joined Consolidated Telephone Co. on Feb. 8, 1951 as central office equipment installer. On Oct. 16, 1952, he became equipment engineer, and on Sept. 23, 1956 was appointed plant superintendent.

Prior to becoming associated with Consolidated, Mr. Brooks was central office equipment installer for Western Electric Co.

He served as a communications chief in the European Theatre with the Air Force during World War II.

Alert to Stay Ahead

The New York *Times* quotes John M. Cassels of the Rockefeller Office, a leading economist, as saying that "claims of the Soviet Union that its economic system is more efficient than that of the United States cannot be supported by the facts."

Mr. Cassels said if present growth rates are maintained, Russia's per capita output will not equal ours for more than a century, which is a far cry from Khrushchev's contention that she will pass us by 1970.

However, Mr. Cassels does describe Russia as a "formidable antagonist." But, as we keep a wary round-the-clock eye on Soviet attainments, both real and alleged, let's not make the foolish and dangerous mistake of selling ourselves short.

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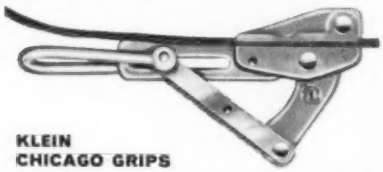
Klein equipment is specially designed for the tough, hard use that it receives in stringing power or communication lines. Grips, hooks, snaps are all drop-forged in Klein's own forge shop to assure maximum strength. All equipment tested to stand loads in excess of safe load indicated.



KLEIN CHICAGO GRIPS

This family of grips suitable for bare wire, solid or strand. You will find a complete selection of grips for every type of conductor in the Klein Catalog. Jaw length and design of groove combine to eliminate conductor damage.

No. 1628-5—available with plain jaws or bronze-lined jaws. Maximum openings from .198 to .522 inch.

SELF-LOCKING BLOCK TACKLE

One of a specialty line of Klein block tackles with steel shell blocks and drop-forged hook. Rope is of highest quality Manila. Safe load, 1200 lb.

No. 1802-30 furnished with detachable hook, as shown. No. 1802-30S furnished with detachable swivel anchor hook.

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The only drop-forged snap of this type on the market. Has swivel clevis and quick-acting plunger latch. Will take ½-inch or lighter hand lines. Safe load, 750 lbs. No. 470.

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Power Equipment Announces Major Sales Staff Expansion

W. H. Graham, vice president and general manager of Power Equipment Co., a subsidiary of North Electric Co. has announced a major expansion in the company's sales force, to give more complete coverage of markets for this manufacturer of power supplies and battery chargers.

William E. Reagan has been appointed field sales manager, reporting to Mr. Graham. His responsibilities include supervision and training of the company's field sales force, as well as sales promotional activities.

Mr. Reagan joined Power Equipment from the Hermetic Seals division of Phillips Control Corp., which he served as sales manager. He was earlier employed as Electronetics division field sales engineer in the Middle Atlantic States for North Electric Co.

It was also announced that Edward J. McQuade will continue as regional sales manager, directing the sale of company products in the Western States. He has served this area since 1957.

William T. Brummett is assigned to the West Coast as sales engineer, reporting to Mr. McQuade. Mr. Brummett was, until recently, headquartered in the home office as a sales engineer.

Charles Schuster recently was promoted to the post of Midwest regional sales manager after working for several years as field sales engineer with North Electric. Located in the Twin Cities area, he will now be responsible for sales in the upper Midwestern States. He has had considerable experience in electronics and sales.

Named as Eastern regional sales manager, was Charles Rich who is responsible for sales coverage in the Eastern United States, including special house accounts in that area. Mr. Rich has had more than ten years' sales and management experience with the Minneapolis-Honeywell Regulator Co.

Based in New York State as sales engineer is Morgan Richards, who reports to Mr. Rich. His sales and computer engineering background includes experience with the Radio Corp. of America and Goodyear.

E. Joseph Seppala will continue as special accounts manager under assignment in the Eastern United States until June. He will then become product manager for a special new product group with offices in Galion, O.

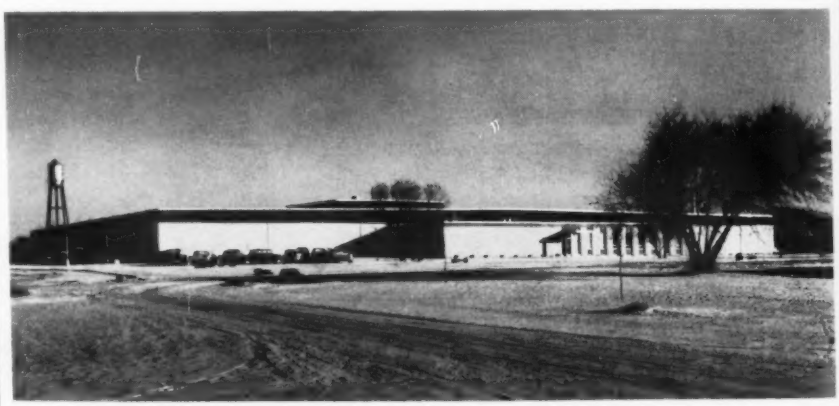
Mr. Graham has also announced promotion of James L. Green to the post of technical sales manager.

Mr. Green has been associated with Power Equipment since 1954, having served both as house account representative and as sales engineer. He reports directly to Mr. Graham in his new capacity.

Exide Promotes Mustard To National Market Position

James A. Mustard Jr. has been promoted to assistant to the vice president-marketing of Electric Storage Battery Co.'s new Exide Industrial Marketing Division.

Mr. Mustard, who was general sales manager of the Nickel-Alkaline division, becomes responsible for market research, advertising and sales promotion, service engineering, and for supervision of such commercial industrial



The new manufacturing plant opened at Cass City, Mich. and shown above will more than double the capacity of General Insulated Wire Works, a division of General Cable Corp. A line of cords and cord sets will be manufactured, including plastic U. L. flexible cords, rubber and plastic power supply cord sets with plastic moldings, custom portable cables, Spiracode wires, U. L. appliance and lead wires, retractile cord sets, specialty wires and hook-up wires, as well as telephone equipment wires. Headquarters management will be maintained at the Providence, R. I. plant.

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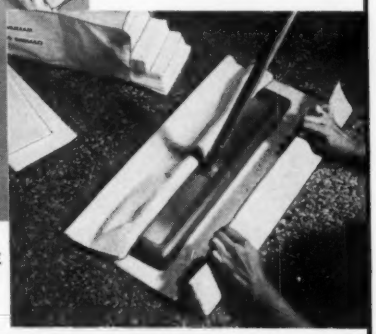

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Plant Training Supervisor, Southern Bell Telephone & Telegraph Co.

Volume I is a simple yet comprehensive treatment of the normal thought process applied to engineering problems. This volume also sets forth the principles of logical analysis in the light of emotional bias and other disruptive factors and explains how these may be applied, in writing, to engineering presentations.

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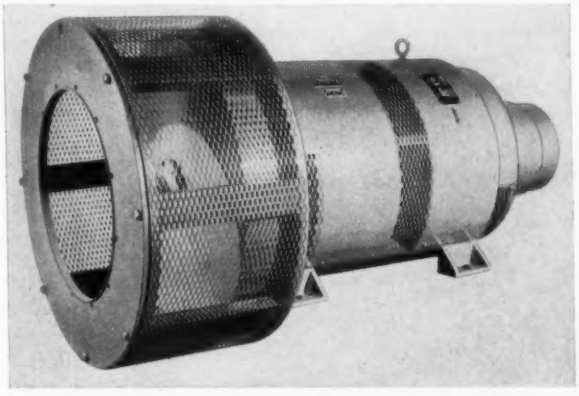

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A "No-Break" power installation in a new micro-wave center is one of a wide variety of applications to which Kato motor-generators and generators are applied by Kato customers.

This Kato Motor-Generator has a unique fly wheel arrangement. In case of failure of normal electric power, the momentum of the large fly wheel is designed to keep voltage fluctuation at a minimum until a standby power plant is cut into the line. Features a brushless type generator, 5 KW, 120 volts, one phase, 50 cps, driven by a 10 H.P. 3 phase motor.

Other Kato generators range from 350 watts to 620 KVA. Special frequencies such as 400 and 1200 cycles are available in many sizes. Rotary converters, frequency changers, 60 Cycle, two bearing and single bearing for engine drive, in speeds ranging from 720 to 3600 RPM.

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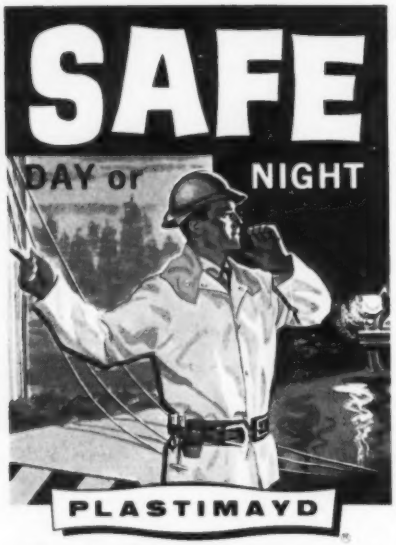

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markets as motive power, railway, electric utility, and switchgear.

He also has over-all responsibility for charging equipment, nickel-iron batteries and nickel-cadmium batteries sold by Exide in all industrial markets.

From headquarters in Philadelphia, Mr. Mustard helps direct the efforts of Exide's field sales and service engineering offices in 52 cities.

He reports directly to C. J. Moore, Exide's vice president-marketing.

A veteran of 24 years in the battery business, Mr. Mustard served as general sales manager of the nickel-alkaline unit for three years. The unit at West Orange, N. J., was known, before its purchase by Electric Storage Battery last August, as the Edison Storage Battery Division of Thomas A. Edison Industries, McGraw-Edison Co.

Previously, Mr. Mustard served as Edison's regional manager in Chicago; for 16 years, as district manager in Washington, D. C., and for four years, as a sales engineer in Philadelphia.

He began his career with the Manufacturers Trust Co., New York, as a credit investigator and as a statement analyst.

A graduate of Duke University with a bachelor's degree in business administration, he studied engineering later while employed.

He is a member of the National Institute of Packaging, Handling and Logistics Engineers, Washington, D. C.

Presidential Profession

It would seem that young people ambitious to become President of the United States would do well to study law—23 of our presidents have been lawyers, and President Kennedy, a graduate of Harvard Law School, makes the number 24.

AC Spark Plug Appoints Two to AChieverfone Sales

AC Spark Plug, Electronics Division of General Motors, has announced the appointment of two sales engineers for the division's AChieverfone mobile radio-telephone system and related communication equipment.

R. H. FITZGERALD

R. H. Fitzgerald has been named to represent the division in the western region of the country. Mr. Fitzgerald was graduated from the United States Military Academy in 1937 with a BS degree. He has had graduate training in radio, radar, and instrumentation

D. W. GILMORE

engineering at the University of California, the University of Michigan, Stanford University, Harvard University, and the Massachusetts Institute of Technology.

Mr. Fitzgerald joined AC as a radar engineer in 1951, and worked in various phases of radar and radio engineering,

until becoming associated with the sales department of the Milwaukee branch.

D. W. Gilmore will cover the eastern area of the United States. Mr. Gilmore was graduated from the University of Missouri in 1955 with a BS degree in electrical engineering.

He received further training and experience in the field of communications as a communications officer with the U. S. Air Force. He went to AC as a field engineer in 1958 and worked on THOR and TITAN missile programs before joining the commercial sales department.

R. A. Ward Sec.-Treas. of Templeton, Kenly & Co.

Robert A. Ward was recently appointed secretary-treasurer of Templeton, Kenly & Co., Broadview, Ill. manufacturer of the Simplex line of industrial mechanical and hydraulic jacks and pullers.

R. A. WARD

Mr. Ward replaces Frank Krickhan, who retired in January. He is an accounting graduate with a record of 20 years with the firm. He rose from timekeeper, to sales representative in Texas, then chief accountant, prior to his present position.

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Index to ADVERTISERS

	Page
AC Spark Plug Div. of General Motors	35
Ace Tree Service	—
Acme Electric Corporation	—
Acme Visible Records, Inc.	—
Airtronics International Corp.	—
Alphaduct Wire & Cable Co., The	73
Altec Lansing Corp.	63
Aluminum Company of America	—
Aluminum Ladder Co.	—
Amchem Products, Inc.	67
American Electrical Heater Co.	—
American Steel & Wire Co.	—
American Telephone & Telegraph Co.	14-15
Anaconda Wire Cable Co.	—
Andrew Corporation	—
Ansonia Wire & Cable Co., The	—
Arps Corporation	64
Arrow Fastener Co., Inc.	—
Automatic Electric Sales Corp.	12-13, 40-41
Baker Wood Division	—
Barber Advertising Specialists, Walt	—
Batlle & Co., Inc., Jos. A.	—
Bell Telephone Laboratories, Inc.	—
Benner-Nawman, Inc.	61
Berry & Co., L. M.	—
Bethlehem Steel Co.	—
Bohnsack Equipment Co.	—
Brady Co., W. H.	—
Brand, Wm.—Rex. Div.	65
Buckeye Telephone & Supply Co.	75
Budelman Electronics Corp.	—
Burgess-Manning Company	—
B. Y. Dial Service	—
C&D Batteries, Inc.	49
Cabaniss-Pogue Co.	74
Cable Construction Co.	74
Cable Spinning Equipment Co.	—
Calculagraph Company	—
Carter Directory Co., Inc.	—
Chance Co., A. B.	—
Chevrolet Div. of General Motors	—
Chicopee Mills Inc.	71
Cleveland Inst. of Electronics	33
Collins Radio Co.	43
Colorado Fuel & Iron Co., The	54
Commercial Cord Company, Inc.	69
Communication Equipment & Engineering Co.	66
Cook Electric Company	28
Copperweld Steel Co.	39
Crane, Inc., Carl C.	74
Danish Import	77
Davis Construction Co.	—
Dial Haven, Inc.	74
Dierks Forests, Inc.	77
Donnelley & Sons, R. R.	—
Duo-Safety Ladder Corp.	68
Dupont de Nemours & Co., Inc., E. I.	—
E. & C. Contracting Co.	74
Electronic Secretary Ind., Inc.	6-7
Electronic Specialties Co.	74
Everstick Anchor Co.	—
Exide Industrial Div.	55
Fitchburg Engineering Corporation	—
Floor-Con	—
Ford Motor Co., The	—
Gagne Enterprises, Inc.	64
General Cable Corporation	—
General Dynamics/Electronics	2-3
General Machine Products Co., Inc.	37
General Telephone Directory Co.	Back Cover
Gladwin Plastics, Inc.	57
Globe Electronics	—
Gould-National Batteries, Inc.	16
Graybar Electric Co.	—
Haley & Co., R. G.	—
Hallamore Electronics Co.	58
Hammond Drierite Co., W. A.	74
Hancock Mut. Life Ins. Co., John	77
Harris-McBurney Company	—
Heckendorn Mfg. Co.	68
Henkels & McCoy	74
Highway Trailer Company	—
Hirsch Organization, Inc., Gustav.	—
Hitachi, Ltd.	45
Holan Corp.	23
Indiana Steel & Wire Co.	—
International Teletronics, Inc.	—
Irwin-Augur Bit Co.	—
ITT-Kellogg	20-21
Jet Line Products, Inc.	—
Johns-Manville	—
Justrite Mfg. Co.	—
Kato Engineering Co.	71
Kearney Co., Jas. R.	—
Kemore Mfg. Co.	76
Kennecott Wire & Cable Div.	—
Keystone Steel & Wire Co.	—
Killoren Company	—
Klein & Son, Mathias	70
Kohler Co.	—
Koiled Kords, Inc.	—
Koppers Co., Inc. Wood Preserving Div.	77
Kwal Paints, Inc.	—
Kwik-Mix Co.	—
Leich Sales Corporation	10-11
Lenkurt Electric Co.	—
Lindsay Telephone Supply Co.	27
Lockheed Electronics Co.	71
Lorain Products Corp., The	5
Lynch Communications Systems, Inc.	—
Magnolia Chemical Co., Inc.	59
Mast Directory Co., Leland	74
McCabe-Powers Body Company	53
McGrath Engineering, Inc.	74
Minnesota Mining & Mfg. Co.	—
Monsanto Chemical Co.	—
Morrison-Pelsue Co.	—
Motorola Communications & Electronics, Inc.	51
Natco Corporation	—
National Standard Co.	—
National Telephone Supply Co.	—
Neubauer Manufacturing Co.	—
Neuses, Inc., P. K.	77
Northeast Electronics Corp.	—
North Electric Company	79
Okonite Company, The	—
Onan Division, Studebaker-Packard Corp.	—
Orangeburg Mfg. Co.	—
Osborne Electronics Sales Corp.	—
Osmose Wood Preserving Co.	—
Owens-Illinois	—
Paine, Webber, Jackson & Curtis	60
Panhandle Electric Sales, Inc.	—
Petersen Engineering Co., Inc.	—
Phelps Dodge Copper Products Corp.	—
Philco Corporation Gov. & Ind. Div.	—
Plastic Wire & Cable Corp.	—
Plastimayd Corporation	72
Porter Co., Inc., H. K.	—
Precision Multiple Controls	—
Preformed Line Products Co.	—
Puregas Equipment Corp.	—
Railway Communications, Inc.	—
Ramset Fastening System	—
Raytheon Company	—
Recordak Corp.	—
Reichhold Chemicals, Inc.	—
Reliable Electric Company	8-9
Remington Rand Div.	—
Rolatape, Inc.	—
S & G Manufacturing Co.	—
Schauer Mfg. Co.	—
Seymour Smith & Son	—
Sherron Metallic Corp.	—
Sierra Electronics Corp.	47
Sloan, Cook & Lowe Co.	74
Smith Directory Service	74
Stampings, Inc.	62
Sterile Telephone Corp.	—
Stewart Brothers	—
Stromberg-Carlson	—
Studebaker-Packard Corp.	—
Superior Cable Corporation	25
Suttle Equipment Corporation	—
Telectric Co.	77
T.E.I. Corp.	74
Telephone Repair & Supply Co.	76
Tele-Wire Supply Co., Inc.	77
Tele-Muff Co.	—
Teletype Corporation	—
Tel-Tronic's Instal. & Supply Co.	74
Templeton, Kenly & Co.	—
Terado Company	—
Thornhill Publishing Co.	—
Transandean Associates, Inc.	—
Truck Equipment Company	—
Tudor & Yager, Inc.	74
Union Carbide Plastics Company	—
United Electric Controls Co.	—
U. S. Cable Constructors, Inc.	74
United States Independent Telephone Association	—
United States Instrument Corp.	63
United States Motors Corp.	—
United States Steel Corp. American Steel & Wire Co.	—
Universal Controls Corp.	—
Utilities Contracting Co.	74
Utility Equipment Co.	—
Utility Service Co., Inc.	56
Utility Tool & Body Co.	—
Vermeer Manufacturing Co.	—
Warren Mfg. Co., The	—
Weikel Line Company	75
Western Electric Co.	—
Whitney-Blake Co.	—
Williams Inspection Co., Inc., A. W.	77
Wilson Rubber Co.	—
Winders & Geist, Inc.	—
Wiremold Co., The	66
Wyoming Valley Equipment Div.	—

WESTERN REPRESENTATIVE:

McDONALD-THOMPSON

625 Market St., San Francisco Cal.

3727 W. Sixth St., Los Angeles

620 Sherman St., Denver, Colo.

National Bldg., Seattle, Wash.

3217 Montrose Blvd. Houston, Tex.

2727 Oak Lawn Ave., Dallas 19, Tex.

2035 S. W. 58th Ave., Portland 1, Ore.

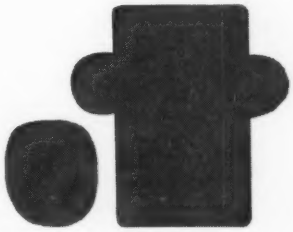
HOW POTENT IS YOUR MERCHANDISING?

Extension revenues are profitable. It is, therefore, a matter of prime import to the forward looking operating company to make use of every possible merchandising advantage in promoting extension installations.

The North Electric Ericofon gives the operating company more merchandising advantages because the Ericofon embodies more potent merchandising features, more "merchandiseability", than any other instrument on the market today!

There's the advantage of style...the Ericofon's modern, free form design represents the only fresh styling the telephone industry has seen in over half a century, styling that has captured the imagination of millions in national consumer advertising, styling that won a Gold Medal for design!

There's the advantage of convenience...the Ericofon's dial in the base represents the ultimate in convenience for the "dial comes to you" for dialing from any distance, any position, any angle...there's no reaching, twisting or groping to dial with the Ericofon.



There's the advantage of size...the Ericofon takes far less space on bedside stand, table, desk...wherever you place it. As a matter of fact, the Ericofon takes only slightly more than half as much space as the smallest two-piece phone on the market!

There's the advantage of the new sound in signaling...the electronic tone signal in the Ericofon is quieter, less nerve wracking, far more pleasant than the old fashioned bell...now there's the Ericofon musical tone to make being called to the phone so much more pleasant!

These advantages spell stronger merchandising, stronger extension promotions, more customer satisfaction and more revenue for the operating company!

North Electric will even help you plan, organize and conduct a real merchandising campaign and furnish materials to help you realize more profit-producing extension sales.

Doesn't it make sense?

THE DYNAMIC FORCE IN THE TELEPHONE INDUSTRY

NORTH ELECTRIC COMPANY

GALION, OHIO

No. 4 in a series of factual presentations on the North Electric Ericofon.

Let our "Revenue Men"

TAKE THE KINKS OUT OF YOUR KNOTTY DIRECTORY PROBLEMS!

Take a man like
Orville Spradling...

Orville is one of our Texas "Revenue Men."

A member of our Golden Directory Club for sales achievement, Orville is representative of the "Revenue Men" who help telephone companies increase their revenue from telephone directory sales.

After serving with the Army Air Force in Europe during the war, he returned to Texas Technical College. Orville then became a salesman with the Lubbock, Texas, Yellow Pages sales unit in 1947. Six years later he was promoted to supervisor of the Lubbock sales unit.

Orville lives in Lubbock with his wife and two sons. An active member in local civic and school activities, he is currently President of his church's Men's Sunday School.

Orville Spradling is another example of the "Revenue Men" who work for the General Telephone Directory Company — who work for you — who are an asset to any community in which they live.

Our Directory "Revenue Men" provide the Independent Telephone Industry with a flexible and highly skilled telephone directory organization. These men—working out of 35 strategic locations —are experienced specialists, trained to give you *complete* and *quality directory service.*

They act as telephone company representatives in their day-to-day contacts with your customers, not only selling and supervising the sale of Yellow Pages advertising—but also acting as public relations representatives for you in their dealings with the public.

Thoroughly trained to know any condition that pertains to telephone service, they're experienced hands at helping large and small Independent Telephone Companies "take the kinks out of knotty directory problems!"

Write or phone our office nearest you for our Complete Directory Service Plan.

GENERAL TELEPHONE DIRECTORY COMPANY

1800 Oakton Boulevard
Des Plaines, Illinois
VAnderbilt 7-6111

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